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SOCIETY OF ARTS.

FRIDAY, JUNE 10th, 1853.

GENERAL MEETING,

Wednesday, June 8th, 1853.

THE General Meeting to receive the Report of the Council relative to their Proceedings during the past year, and the Auditors' Statement of Accounts, was held on Wednesday, the 8th inst., Capt. H. Cunliffe Owep, R.E., in the chair.

The following were elected Members :

Best, Hon. and Rev. Samuel, Andover.
Broad, C. W., Dover.
Clark, Rev. Samuel, Battersea.
Dawbam, George, Wisbeach.
Duckworth, William, 38, Bryanston-square.
Freer, Rev. R. Lane, Hereford.
Gallsworthy, John, Gresham Club.
Greig, Sir Hector, Brompton.
Herring, Thomas B., Finchley.
Hollier, Elliot, Dudley.
Hume, William Burnley, Trinidad.
Jackson, Samuel, Red Lion-street.
Peake, Rev. J. Room, Whitechurch.
Reynolds, J. S., Hampstead.
Skey, Dr., 3, Hertford-street.
Tapp, T. Berrett, Hertford.
Webb, T. Bellamy, Lincoln's-inn.

The following Institutions have been taken into Union since the last Meeting :

270. Dudley, Mechanics' Institution.
271. Camberwell, Literary and Scientific Institution.
272. Whitechurch (Salop), Mechanics' Institute.

REPORT from the Council to the Society on the close of the Ninety-ninth Session.

In compliance with the Rules of the Society, the Council have now the pleasure of meeting the members at the close of the Session, and of laying before them a brief Report of the transactions of the past year,—a duty which they perform with all the more satisfaction, as they feel that they may with reason congratulate the members on the increased power and utility of the Society.

The General Union of Country Institutions, formed rather more than twelve months since, and which was mentioned in the last Annual Report as then including 71 Institutions, has continued steadily and gradually to increase, and now numbers 270 of the chief local Institutions in the country. Though in fact still far from fully organised—a work which must evidently be one of time and experience—the Union has already sufficiently shown the practical value and utility of such an extended system of co-operation, and has led to many results of the greatest importance. On the 9th inst. the Representatives of these Institutions will meet, for the first time, as a Committee, to consider and discuss on the best mode of carrying on the operations of the Union in future. The Council refrains from entering into further particulars, because a detailed Report of the proceedings of the Institutes' Committee during the past year will be laid before this meeting, and published in the Society's Journal.

A very important change has been made in the form and mode of publication of the weekly proceedings, the Council having, after due con-

sideration, determined on the regular publication of a Weekly Journal, which should at the same time include reports of the ordinary meetings of the Society, the proceedings of Committees, correspondence, and memoranda respecting all subjects coming within the range of the Society's operations. In some respects this change has been attended by most valuable results; and from the more varied character of the publication, and its regular appearance once a week, it has gradually become an organ of considerable importance; so that the Council feel fully justified in continuing its publication, and may perhaps even endeavour still further to extend and improve it. As a means of disseminating the information collected by the Society; as an organ for acquainting the members with the proceedings and reports of particular meetings and Committees; and as a medium of communicating with the associated Institutions and their members, the Journal has already proved to be of much value. The Council hope that the organ of correspondence thus offered to practical men will be frequently made use of by the members, because, bearing in mind the very large circulation which the Journal commands, it is evidently a most excellent medium both for collecting and for disseminating information. Its utility as an organ of technical correspondence will probably be more fully appreciated when the members become more accustomed to its appearance.

The alterations which were decided upon respecting the locality and nature of the East Indian Exhibition, and the reasons which led the Council to abandon their original plan of holding the Exhibition in London, have already been stated to the Society. It is enough now to say, that the result has fully proved the wisdom of the suggestion of the Royal President which led to this determination; and that the hearty co-operation with which the Council was met by the executive of the Dublin Exhibition, whilst it tended to render the East Indian collections more practically valuable and instructive than they would have been as an isolated Exhibition, at the same time satisfactorily showed that the desire of the Council to aid the Dublin Exhibition was both understood and appreciated. The labours of the Indian Exhibition Committee were most handsomely responded to; and the gracious contributions of Her Majesty; the valuable and unique collections sent over by the Government of the Netherlands; the rare and interesting articles lent by the Hon. the East India Company; and the numerous selections of Eastern articles kindly lent by the Royal Asiatic Society, the United Service Museum, the Marchioness of Headford, Lord Gough, Mr. Reeves, Mr. Twining, Colonel Sykes, Mr. Bonner, Mr. Downing, Mr. Bridge, Dr. Wallich, Mr. Prideaux, Mr. Rothsay, Messrs. Hewitt, and others, have together constituted the Eastern Court of the Great Dublin Exhibition one of the most interesting parts of the whole collection. The selections from the Royal Museum of the Netherlands, graciously entrusted to the Society, and sent over to Ireland under the especial charge of M. Van de Kastele, are of peculiar value, and serve to illustrate the habits and customs of the people of Japan in a very remarkable manner.

The Second Report of Her Majesty's Commissioners for the Great Exhibition of 1851, involving as it did many questions of the highest value, received the careful consideration of the Council, who appointed a Committee to ascertain in how far the Society was in a position to carry out those suggestions in the Report which seemed most nearly to come within the legitimate province of the Society, and which the Report itself clearly indicated it was best fitted to undertake. The Council believed that the trade and commerce of the country might be materially aided by the formation of a great Industrial Museum, as suggested in that Report; and though they would have hesitated to take upon themselves the formation of so large a Museum, they conceived that they could well aid in the further development of the plan put forth by the Commissioners, by collecting some of the necessary information and specimens which such a Museum must contain. They therefore proposed to the Royal Commissioners to undertake, conjointly with them, the formation of a collection of animal raw produce and manufactures, as the first step towards carrying out the more comprehensive plan of the Commissioners, and as the commencement of a future Trade Museum. This proposal was fully approved by the Royal Commissioners, and the duty of carrying it out has been confided to Professor Solly, who, on accepting the charge of this special collection, and the correspondence to which it will necessarily lead, expressed to the Council a wish not to be again put in nomination as Secretary at the coming election in July next.

The Report of the Royal Commissioners, and the suggestions which it contained, likewise induced the Council to appoint a Committee to collect information respecting the present state of Industrial Education, and the alterations in the modes of teaching at present adopted which might appear desirable. The Report of this Committee, recently presented to the Council, embodying as it does the experience of a large number of the leading manufacturers, clergymen, schoolmasters, and friends of education generally, is of much practical value, and will shortly be published.

Besides the Eastern Exhibition already referred to, two special Exhibitions have been held during the past session—one of recent patented and registered inventions, and one of photography. The former, constituting the fourth annual exhibition of inventions which has now been held by the Society, included nearly 200 articles, contributed by 120 exhibitors. Of the value of these yearly collections, in illustration of the progress of invention, it is quite unnecessary to speak. The Photographic Exhibition held last December, as the first public attempt to collect together examples of the various processes employed in this new and very interesting art, has already produced important results, by drawing the attention of the public to the rapid advances which have of late years been made, and the great capabilities which the art possesses; whilst the discussions to which it gave rise, and the comparison of different modes of taking pictures, and the various kinds of apparatus employed, are every day leading to new discoveries and improvements. Great advances

may also be expected from the labours of the recently-formed Photographic Society; and the Council have therefore felt pleasure in offering to them the use of the meeting-room, and such other facilities as could be afforded.

The members will have observed with interest the gradual development of the spirit of industrial emulation and comparison, which is everywhere becoming apparent in the announcement of Exhibitions. The Council have lost no opportunity of aiding these Exhibitions; and they have recently appointed a special Committee for the purpose of promoting the due representation of British manufactures at the approaching Universal Exhibition in Paris in 1855.

The Prize-list of the present session has produced many valuable communications, which have been referred to the various standing Committees for consideration and report. Some of these—namely, the papers of Messrs. Claudet, Stones, Blackwood, Mordan, Denison, Kingsley, and Wenham, have been read at the Wednesday evening meetings; and others, which it was not possible to bring before the Society in this manner, have been recommended for reward, and will therefore receive such distinctions as they are considered entitled to at the approaching distribution of prizes and rewards. The Prize-list for the ensuing session has been very carefully revised, and will shortly be issued.

The financial position of the Society has been already explained by the Auditors' Statement of Accounts, circulated amongst the members at the commencement of the present month. It may be here stated that the income has increased from 2,883*l.* 5*s.* 11*d.* in 1852, to 3,909*l.* 9*s.* 2*d.* in 1853.

The number of new members who have been elected during the session is 327, whilst during the same period the Society has lost 10 members by death, and 55 have left the country, or withdrawn for other reasons; making the total increase of members during the past year 262.

By order of the Council,
E. SOLLY, *Secretary.*

THE CONFERENCE.

THE Second Annual Conference between the Representatives of the Institutions in Union and the Council of the Society of Arts, was held on Thursday, the 9th instant, at eleven o'clock, A.M. The Chairman of the Council, Henry Cole, Esq., C.B., in the chair.

The following Members of the Council attended: the Rev. Dr. Booth, F.R.S., Mr. Harry Chester, Mr. Warren De la Rue, F.R.S., Captain Owen, R.E., Dr. Lyon Playfair, C.B., Capt. Eardley Wilmot, R.A., and Mr. Winkworth.

The following Members of the Institutes' Committee, not members of the Council, also attended: Mr. R. D. Grainger, F.R.S., Mr. MacDonald, and Mr. Redgrave.

The following is a List of the Institutions represented at the Conference, and of the names of the respective Representatives:

Aberdeen, Mechanics' Institution	Mr. Alexander Bain.
Alton (Hampshire), Mechanics' Institution	Mr. Charles Stewart.

Annan, Mechanics' Institute	Mr. Wm. Ewart, M.P.	Grantham, Philosophical Institution	Mr. Thomas Winter.
Ashbourn, Literary Institute	Mr. John W. Lister.	Grantham, Public Literary Institution	Mr. J. Hancock, and Mr. Bushby.
Ashford, Mechanics' Institute	Mr. Henry Whitfield.	Gravesend and Milton, Mechanics' Institute	Mr. R. Nelms.
Aylesbury, Mechanics' Institution.	Dr. Lee.	Greenwich, Useful Knowledge Society	Dr. Prior Purvis.
Basingstoke, Mechanics' Institute	Mr. F. W. Bushell.	Guildford, Institute.	Mr. E. W. Martin.
Bath, Athenæum.	Mr. J. Shenstone.	Hailsham, Mutual Improvement Society	Dr. J. M. Cunningham.
Battersea, Literary and Scientific Institution	Mr. J. C. Buckmaster.	Hastings, Mechanics' Institution	Mr. John Banks.
Battle, Mechanics' Institution	Mr. Horace Martin.	Hereford, Philosophical Antiquarian, and Lit. Society	The Ven. Archdeacon, R. L. Freer.
Bedford, Literary and Scientific Institution.	Mr. James Coombs.	High Green, near Sheffield, Mechanics' Institution	Mr. Geo. Chambers.
Bexley Heath, Society for the Promotion of Useful Knowledge	Mr. Flaxman Spurrell.	Hertford, Mutual Instruction Society	Mr. Thomas B. Tapp.
Biester, Literary Institution and Mutual Improvement Society	Mr. Johnson, F.R.A.S.	Holmfirth, Mechanics' Institution	Mr. John Hixon and Mr. J. Beardsill.
Blandford, Institution.	Mr. F. H. Bastard.	Huntingdon, Literary and Scientific Institution	Rev. J. H. Millard, and Rev. R. Haworth.
Boston, Athenæum.	Mr. J. W. Bontoft.	Hythe, Reading Society.	Mr. H. B. Mackeson.
Braintree and Bocking, Literary and Mechanics' Institution	Mr. G. Courtauld.	Ipswich, Mechanics' Institute	Mr. T. S. Gowing.
Brentford, Literary and Scientific Institution	Rev. F. Thompson, B.A.	Lancaster, Mechanics' Institute	Mr. Thomas Storey.
Brighton, Athenæum and Young Men's Literary Union	Mr. W. Coningham.	Leeds, Mechanics' Institution and Literary Society	Mr. James Kitson, and Mr. W. J. Traice
Brighton, Mechanics' Institute	Mr. Henry S. Turrell.	Leeds, Yorkshire Union of Mechanics' Institutes	Mr. Edw. Baines, and Mr. James Hole.
Bristol, Athenæum.	Mr. Edward Halsall.	Leicester, Mechanics' Institution	Mr. J. F. Hollings.
Bromley, Literary Institute.	Mr. Samuel P. Acton.	Lewes, Mechanics' Institution	Mr. Burwood Godlee.
Cambridge and Cambridgeshire, Mechanics' Institute	Mr. H. Harris (Mayor).	Limerick, Literary and Scientific Society	Mr. Wm. Lane Joynt.
Carlisle, Literary, Scientific, and Mechanical Institution	Mr. J. Ferguson, M.P.	Lincoln and Lincolnshire, Mechanics' Institute	Mr. Jas. Hitchins, and Mr. James Snow.
Carmarthen, Literary and Scientific Institution	Mr. D. Morris, M.P.	Liverpool, Mechanics' Institution	Mr. W. Nichol.
Chatham, Rochester, Stroud, and Brompton, Mechanics' Institute	Mr. G. D. Banes.	„ Collegiate Institution	The Rev. J. Saul Howson, M.A.
Chelmsford, Literary and Mechanics' Institution	Mr. W. W. Duffield.	London, The Bank of England Library and Literary Association	Mr. Matthew Marshall.
Cheltenham, Literary and Philosophical Institution	Mr. Samuel Higgs Gael.	„ Camberwell Industrial Institution	Mr. H. Allport.
Chichester, Literary Society and Mechanics' Institution	Mr. H. W. Freeland.	„ Camberwell Literary and Scientific Institution	Mr. D. Stewart Dykes.
Coggeshall, Literary and Mechanics' Institute	Mr. M. Gardner.	„ Hackney Literary and Scientific Institution	Mr. George Ofor.
Cork, Royal Institution.	Mr. Wm. C. Logan and Mr. R. I. Lecky.	„ Jews' and General Literary and Scientific Institution	Mr. M. S. Oppenheim.
Crieff, Mechanics' Institution	Mr. James Maxtone.	„ Kingsland, Dalston, and De Beauvoir Town Literary and Scientific Institution	Mr. D. Grant.
Deptford Institution.	Mr. W. S. Veness.	„ London Domestic Mission Society	Mr. J. M. Wade.
Derby, Mechanics' Institution	Mr. Thomas Madeley.	„ London Mechanics' Institution	Mr. Samuel Vallentine, and Mr. A. M'Farlane.
Devonport, Mechanics' Institute	Mr. Isaiah C. Radford.	„ Marylebone and Paddington Literary Institution	Mr. J. S. Hattersley.
Dover, Museum and Philosophical Institution	Rev. William Yate.	„ Walworth Literary and Scientific Institution	Mr. J. S. Noldwritt.
Dudley, Mechanics' Institution	Mr. Elliott Hollier and Mr. S. H. Blackwell.	„ Westminster Literary, Scientific, and Mechanics' Institution	Mr. Thomas Smith.
Dunmow, Literary and Scientific Institution	Mr. W. I. Clayton.	Longton, Athenæum and Mechanics' Institution	Mr. S. P. Goddard.
Durham, Mechanics' Institute	Mr. J. Bramwell (Mayor)		
Eastbourne, Literary Institute	Mr. A. Whiteman.		
Epsom and Ewell, Literary and Scientific Institution	Mr. A. O'Brien Jones.		
Falkirk, School of Arts.	Mr. R. W. Kennard.		
Falmouth, Mechanics' Institute	Mr. W. K. Norway.		
Gateshead, Mechanics' Institute	Mr. W. Hutt, M.P.		

Loughborough, Literary and Scientific Society	Rev. Henry Fearon.	Tyldesley, near Manchester, Mechanics' Institution and Mutual Improvement Society	Mr. Caleb Wright.
Lymington, Literary Institution	Mr. A. W. Beetham.	Wandsworth, Literary and Scientific Institution	Mr. A. Coleman.
Lynn, Conversazione and Society of Arts	Mr. Henry Edwards.	Ware, Institute	Rev. R. Ricards.
Macclesfield, Society for the Acquirement of Useful Knowledge	Mr. John Brocklehurst, M.P.	Warminster, Athenæum . .	Rev. H. M. Gunn.
Manchester, Institutional Association	Dr. J. W. Hudson.	Wednesbury, Mechanics' Institution	Mr. Sampson Lloyd.
Margate, Literary and Scientific Institution	Dr. G. Yeates Hunter.	Wellingborough, Mechanics' Institution	Mr. Thomas S. Curtis.
Modbury, Institution . . .	Mr. John Andrews.	Wenlock, Agricultural Reading Society	Mr. R. D. Grainger.
Morpeth, Mechanics' and Scientific Institution	Mr. Matthew Soulsby.	Welshpool, Reading Society	Mr. Oliver E. Jones, and Mr. E. Evans.
Newbury, Literary Institution	Mr. Henry Godwin.	Wisbech, Mechanics' Institute	Mr. George Dawbarn.
Newport, Monmouthshire, Athenæum and Mechanics' Institute	Mr. W. M. Jack.	Winchester, Mechanics' Institution	Rev. F. Bugby.
Northampton, Mechanics' Institute	Mr. John Becke.	Woburn, Literary and Scientific Institution	Lord C. J. F. Russell.
Norwich, Young Men's Institute	Rev. A. B. Power, M.A.	Wolverhampton, Athenæum and Mechanics' Institute	Mr. Thomas Farmer.
Nottingham, Mechanics' Institution	Mr. Arthur Morley	Wrexham, Literary Institution	Mr. W. Raimondi.
Oldham, Lyceum	Mr. W. J. Fox, M.P.	<p>The CHAIRMAN, in opening the proceedings, said :—Gentlemen, it is my duty, as Chairman of the Council, to preside on this occasion ; and, in the first instance, to express to you the pleasure which the Council has in meeting you here to confer with you on the subject of Mechanics' Institutions. I need not tell you that the business to-day is extremely lengthy, and it has required some tact to put it under some general heads, in order that we may not sit here till to-morrow night. I estimate that there are about six or seven classes of subjects to be considered, which it will be desirable for you to discuss ; and if we allowed one minute to each representative who intends to appear here to-day, to speak on those six or seven subjects, I am afraid we should have to make up our minds not to go away till eleven o'clock to-morrow night. I think, therefore, you will see there is some reason, as well as some necessity, for our being as brief as possible in what we have to say, and confining our observations to the precise points upon which we wish to speak. I intend to follow that rule myself, and to try and compress what I have to say in five minutes ; and with the concurrence of the meeting, I shall ask representatives, if possible, to make it a rule, not to allow their observations upon each distinct point to exceed five minutes. I think unless they are prepared to sit here very much longer than I apprehend they are, it will be necessary for them to come to that conclusion. With your leave, therefore, I shall have the disagreeable office of interrupting persuasive eloquence in the midst of its career, unless you support me in carrying out the arrangement. The Council has felt that in the whole management of this Union, the principle enunciated at the last Conference must be borne in mind ; namely, that it is the duty of each Institution to do its own work, and for the Society of Arts to do that amount of work which the Institutes cannot do of themselves, and which can only be done by means of combined action ; and therefore I shall ask you to bear in mind that if</p>	
Pendleton, Mechanics' Institution	Mr. Joseph Ashworth.		
Peterborough, Mechanics' Institution	Rev. William Strong.		
Portsmouth and Portsea, Literary and Philosophical Society	Mr. R. F. G. Smith.		
Rawtenstall, Mechanics' Institution	Mr. John B. Whitehead.		
Reading, Literary, Scientific, and Mechanics' Institution	Mr. James Boorne.		
Reigate, Mechanics' Institution	Mr. Thomas Martin.		
Romford, Literary and Mechanics' Institution	Rev. W. T. Jones, M.A.		
Royston, Mechanics' Institute	Mr. John Warren.		
St. Just, near Penzance, Institution	Mr. C. E. Trezise.		
St. Leonard's, Mechanics' Institution	Mr. Alfred Burton.		
Salisbury, Literary and Scientific Institution	Mr. Newell V. Squarey.		
Saltash, near Plymouth, Institute	Mr. J. Williams, jun.		
Sevenoaks, Literary and Scientific Institution	Mr. George Franks.		
Shelton, Potteries Mechanics' Institution	Mr. Smith Child, M.P.		
Shrewsbury, Church of England Literary and Scientific Institution	Mr. R. A. Slaney.		
Southam, Mutual Improvement Society	Mr. H. L. Smith.		
Southampton, Polytechnic Institution	Mr. H. Pond.		
Stamford, Institution . . .	Dr. W. L. Hopkinson.		
Stirling, School of Arts . .	Mr. James Morrison.		
Sudbury, Literary Institution and Museum	Rev. Edward Bull, M.A.		
Thame, Mutual Improvement Society	Mr. J. C. Tingle.		
Tunbridge, Society of Literary and Scientific Inquirers	Major Scoones		
Tunbridge Wells, Useful Knowledge Institution	Mr. N. E. Stevens.		

there is anything you think ought to be done which has not been done, you will reflect for an instant and consider whether it does not come under that class of duties which Institutes ought to have done for themselves, and which, in fact, no central authority whatever could do for them. All the Council can do is to suggest, and it is for the Institutions themselves to carry out their own work. Another point I will thank you to bear in mind is, that any thing in this world that is to be done, cannot be done in an instant. Works worthy of being done, do not grow up like mushrooms; if you wish to have an oak tree, you must begin by planting an acorn, and wait patiently for some time for it to develop itself. A number of impossible discussions have been proposed to the Council during the year: for instance, gentlemen living far North, have suggested that we should send down first-rate lecturers—men like Faraday—some 300 or 400 miles, and that the whole expense should come within a pound. Now I confess that no central power which I can conceive would be able to accomplish that feat; and it will be for you to judge how far such a thing is possible. Another point of difficulty I would mention has been the question of the Journal. The Council thought the establishment of a Journal, for every Institute to pour its suggestions into, and to record its advice, its feelings, and its wishes, would be very useful. They accordingly established a Journal at a very considerable drag upon their funds; in fact it involved the expenditure of the funds of the Society to an extent nearly equivalent to the subscriptions of all the Institutes. If that Journal is not what I think it ought to be, and if the Institutes have not corresponded with it, to tell their grievances and their wants, of course it cannot be said to be the fault of the Council. The working of the Institutes' Union has been entrusted to a Committee presided over by Mr. Chester; and certainly if that Committee has not been able to do all that might be thought possible, it has not been for any want of zeal on the part of the Committee, or of devoted attention on the part of Mr. Chester. They have met every week for two or three hours, going over masses of correspondence, and have really done the best they could. It has been their duty to make an address to the Council, setting forth the result of their proceedings during the year, which I shall call upon the Secretary to read before saying anything further.

The Secretary then read the following

REPORT OF THE INSTITUTES' COMMITTEE TO THE COUNCIL OF THE SOCIETY OF ARTS.

The Second Conference of the Representatives of Literary and Scientific Institutions, and Mechanics' Institutes in Union with the Society of Arts, is to take place on Thursday, the 9th inst.; and it seems necessary that the Committee, which has been charged with the business of the Union, should previously present to the Council a general summary of its proceedings during the past year.

The Committee, in making its Report, draws attention, in the first place, to the number of Institutions already comprised in the Union: that number is 270, of which 250 are in England,

13 in Scotland, and 7 in Ireland. Of 140 Institutions represented at the Conference held on the 18th of May last year, 121 have joined the Union; while 149, not then represented, have accepted the resolutions agreed to on that occasion as the basis of the Union. One Institution has felt it necessary to withdraw from the Union for want of funds, and another has ceased to exist.

During the past year, the works named in the following list have been presented to the Society for distribution among the Institutions in Union:

Committee of Council on Education:—Reports of, for the years 1839-40, and 1844-52, with two volumes on Parochial Unions (in all, 17 vols.)

Commissioners of National Education for Ireland:—Reports of (in all, 7 volumes).

Commissioners for the Great Exhibition of 1851:—Jurors' Reports.

Department of Practical Art:—Prospectus; Superintendents' Letters; Catalogue of Museum; Reports on Students' Works; Table of Colours; Statement on Importance of Drawing Schools; and Essay on the Principles of Decorative Art, by Owen Jones.

General Board of Health:—Reports and Minutes of Board, and Reports of Surveying Officers.

Home Office:—Mr. Tremenhare's Report on the State of the Mining Districts.

C. Babbage's Bridgewater Treatise; Remarks on the Income-Tax; and Engraving of his Analytic Engine or Calculating Machine.

F. and W. Cash:—Bastiat, on Political Economy.

J. J. Mechi:—On Agricultural Improvement.

Dr. Lyon Playfair:—Industrial Education on the Continent.

Price's Patent Candle Company:—Report on Schools attached to their Manufactory.

Society for Improving the Condition of the Labouring Classes:—Various Pamphlets.

Professor E. Solly:—On Trade Museums.

Dr. H. Wampen:—On Industrial Universities.

G. F. Wilson:—On the Stearic Candle Manufactory.

The Society itself has presented:—Its Transactions for the years 1846-8 (1 vol.); Catalogues of its Exhibitions (1 vol.); its Prize Colour-Box; its Prize Instrument-Case; and copies of the following works: Bell's "Outline from Outline;" Rev. W. W. Cazalet, "On Musical Instruments;" H. Grant's "Diagram of Colours;" the Dean of Hereford, "On Self-supporting Education;" G. Sharp's Prize Essay "On Banking;" Taylor's Prize Essay "On Bengal Cotton;" and G. W. Yapp, "On Art-Education."

The Weekly Journal of the Society, which has been stamped for circulation through the Union, has not yet assumed that state of completeness which the Committee desire; but a portion of its space has been regularly devoted to brief notices of the proceedings of the Institutions—to condensed abstracts of their Annual Reports, where forwarded—to circulars and other documents issued by the Council affecting Institutions—and to discussions by correspondence, and otherwise, bearing upon the interests of the Union.

The attention of the Society, and especially of this Committee, in the interests of the Union, as

well as of the Society's general objects, has been directed, during the past year, to several subjects, the importance of which will be appreciated by the Conference.

By a Circular dated the 11th November, 1852, the influence of the Union has been brought to bear, with concentrated force, upon Parliament, in favour of Mr. Tufnell's motion for the gratuitous distribution of a selection of Parliamentary Papers to Institutions. A Committee, favourably constituted, has sat upon the subject. Mr. Harry Chester, the Rev. Dr. Booth, F.R.S., two Members of this Committee, Mr. Edward Baines (of Leeds), President of the Yorkshire Union of Mechanics' Institutes, and Representative of that body at the ensuing Conference; Professor Solly, F.R.S., Secretary to the Society of Arts, have been examined before Mr. Tufnell's Committee; and though it has not yet reported to the House, it is confidently expected that Parliament will be recommended to concede this important boon to Institutions.

The Committee have recently had confided to them, by the Council, a general inquiry into the operation of the Fiscal Restrictions on Paper, Advertisements, News, and Foreign Books. That the question is one which has a very important bearing upon the interests of the Institutions, may be considered to be proved by the replies received to the Queries proposed by the Society, on the 8th of March, 1853, as to what Institutions had News-rooms, and whether they were successful, and as to how far and in what way they were influenced by these restrictions. An abstract of these replies is given in Appendix I. (*Vide* No. 19 of the Journal, page 219), which condenses the experience of the Institutions on the subject. The Committee is still engaged in the prosecution of this inquiry, and hopes that the opportunity of the approaching Conference may be taken to elicit the sentiments of the Representatives with regard to those restrictions.

The condition of the Libraries of the Institutions in Union, and the best means of improving their supplies of books, have been carefully considered by this Committee. By a circular recently issued, the Publishers and Booksellers of the United Kingdom have been invited to co-operate in an arrangement which, without being inconsistent with the customs of trade, would prove of great advantage to Institutions. A liberal rate of reduction was asked for, and the following plan was suggested:

1. The Institutions in Union with the Society will send to the Society monthly (say by the 15th of each month) a list of the books which they wish to purchase.
2. The orders will be given wholesale to the Publishers or Booksellers by the Society monthly (say on the 19th of each month).
3. The Publishers, or Booksellers, will deliver the book, carriage paid, monthly (say the last day of the month), at the Society's Office, or at the Society's Agents, as the Society may determine.
4. Payment will be made by the Society on the delivery of the goods.

The Institutes' Committee have received such replies to this Circular as render it desirable

that the Council at the ensuing Conference should bring the subject before the Representatives.

Suggestions made from time to time that the Society might lend useful support to Institutions, by sending to them, on special occasions, interesting objects for exhibition, have been carefully considered by the Committee. Steps have, in consequence, been taken for procuring, *e.g.*, a collection of Photographs capable of being put into a small space for the convenience of transit from point to point, and likely to prove interesting and instructive. This collection comprises a large number of Photographs, supplied by the most accomplished practitioners of the art, and illustrating its different processes and the latest results of improvement.

Your Committee has concluded a negotiation for a general Interchange of Privileges between 162 of the Institutions in Union, whereby a Member of any one of these Institutions, when visiting a town in which any other is situated, may enjoy at that other, for the time being, all the advantages of Membership. It is intended to publish, early in July, a Sheet List of the Institutions in Union, marking those that have agreed to the Interchange of Privileges, which, it is believed, will be found useful to the members of the different Institutions. Arrangements have also been made for the admission of members of Institutions to the Meetings and Exhibitions of this Society. To each Institution in Union within twelve miles of the General Post-office, three transferable admissions to each Meeting and Exhibition are sent; and beyond that distance, members who bring notes from the Secretaries of their respective Institutions are admitted without restriction as to number. It is hoped, that as the Union is strengthened, the Interchange of Privileges thus effected will assume new and important features, and one has already been suggested by a Circular dated the 19th July, 1852, pointing out how easily local museums might be formed by a systematic interchange of specimens. An abstract of the returns to this Circular is given in Appendix II. (*Vide* No. 3 of the Journal, page 30.)

The subject of Lectures has occupied the continued and anxious consideration of the Committee. It is one of extreme difficulty, but they feel unabated confidence that time and experience will enable the Society to obtain important benefits for the Union in this respect. In the meantime, they have collected information which tends towards a solution of the difficulties by which it is surrounded. On this question a letter has been received from Mr. Hughes, which was published in No. 28 of the Society's Journal, setting forth the results of his experience as a lecturer recommended by the Society. They desire also that the attention of the Representatives at the Conference should be particularly directed to the Report on this subject presented by the Committee to the Council. A copy of these documents is given in Appendix III. (*Vide* No. 28 of the Journal, page 333, and No. 8, page 88). They consider that the periodical Conferences will afford great facilities for making combined arrangements with Lecturers, and they think that the present occasion should be specially turned to account, by laying a foundation for

such combinations. The Committee, after much inquiry, have determined to make no recommendation on the subject of Lectures until they have had an opportunity of hearing the opinions of the Representatives, and of ascertaining from them the extent of co-operation, on the part of the Institutions, which may be relied on by the Society.

To elicit information as to the progress and results of Institutions, with suggestions for their effectual improvement, a special Prize of the Society's Medal and 50*l.* was offered for the best Essay on the following subject:—"On the History and Management of Literary, Scientific, and Mechanics' Institutions; and especially how far, and in what manner, they may be developed and combined, so as to promote the moral well-being and industry of the country." The prize has been awarded to Mr. James Hole, Honorary Secretary to the Yorkshire Union of Mechanics' Institutes, and his Essay is in the hands of the Messrs. Longman for publication.

Your Committee has inquired into the Legal Position of Institutions, and upon this subject has presented to the Council a Report, upon which it is desirable that the opinion of the approaching Conference should be taken. A copy of the Report is given in Appendix IV. (*Vide* No. 11 of the Journal, page 124.)

Through another Committee of the Society, the attention of the Institutions in Union has been drawn to the important subject of Industrial Instruction.

In conclusion, the Committee refer to the measures which have been taken this year with the view of connecting the Conferences of the Union with collateral opportunities for instruction and amusement. These, it is hoped, may be so extended in future years as to render the stay of the Representatives in Town as useful and as agreeable as possible.

(Signed) HARRY CHESTER,
Chairman of the Committee.

Society of Arts, June 6th, 1853.

At a Meeting of the Council of the Society of Arts, held on the 6th day of June, 1853, the foregoing Report of the Institutes' Committee having been read, it was

RESOLVED, — That the Report be approved and adopted; and that it be presented to the Representatives of the Institutions in Union at the Conference on the 9th inst.

(Signed) EDWARD SOLLY,
Secretary to the Society of Arts.

The CHAIRMAN resumed: The Institutes Committee have thought from the very great multitude of suggestions that have been brought before them, that it will be well if they are discussed under the following heads. First, Parliamentary Papers. Second, The provision of Books and Maps. Third, News-rooms and Reading-rooms. Fourth, Lectures. Fifth, Classes, &c. Sixth, Statistics and Trade Museums. Seventh, the Legal Position of Institutes. Amongst the suggestions sent to the Committee, all will be found to group themselves, more or less, under those respective heads, and I hope gentlemen will take each head by itself. I hope the representatives will not go into a second subject before they have discussed and finished

the first; and, as I have said before, I am going to ask them to bind themselves down to five minutes on each subject. Of course we are quite willing to receive the suggestions of everybody, but as there are a great number of Representatives present, and very few who are not, we think it right to make a rule that no one should speak who is not a Representative, and that each Representative as he rises should mention the Institute he represents.

I.—PARLIAMENTARY PAPERS.

Mr. EWART, M.P. (Annan), as a member of the Parliamentary Committee, on the question of Parliamentary Papers, thought he might save some time if he briefly stated the present position of the Committee on that subject. They had gone through the evidence, and were now ready to report. Mr. Tufnell, the Chairman of that Committee, had been prevented by illness from summoning the Committee to agree to a Report; but he thought he might safely say, the Report would be such as would give general satisfaction to the Institutes throughout the country. They had gone into the question of public libraries, and literary and scientific Institutions generally, and he believed the Report would be quite in harmony with the general feelings of the Society.

Mr. SLANEY (Shrewsbury) took a deep interest in the subject, and thought nothing could be of greater utility than a selection of the Parliamentary Papers to be distributed through the country, especially as giving just views of facts and statistics. Having been long in Parliament himself, and having felt the great loss of not being able to have reference to subjects of this nature, from the complexity of the mode in which the indices were made out, he thought some simple index, pointing out the various subjects, and drawn out by some one acquainted with the work, would be of the very first importance, and might be done at a very small expense by volunteers, if it was not done by the Committee now considering the subject. Without speaking of party politics at all, he was convinced that a knowledge of the facts of the varied questions would go far to content many persons, and to give them a view of the truth, which they could not otherwise arrive at. Many intelligent members of the working classes would be very thankful for the opportunities of acquiring just views which would be afforded by the distribution of these papers.

Mr. W. J. FOX, M.P. (Oldham), said, huge masses of valuable statistics and interesting information were buried in the blue-books, of which the public very often knew nothing; and the materials for many popular novels and popular treatises were drawn from this source. What he wished to suggest was, that not merely the gratuitous distribution of a selection of these papers was desirable, but, what he took to be yet more desirable, and more productive of general convenience, would be the circulation of a descriptive and priced catalogue of the Parliamentary Papers. The price affixed was generally so exceedingly low, that there was scarcely an Institute in the country but what could afford to purchase a considerable number; and whilst they would be grateful for a selection made for them, he thought a vast number of the Institutes would very much prefer to make a selection for themselves, if they had the opportunity of doing so: and it was only by means of such a catalogue as he had suggested that they could possess the means. If it were necessary to quote authority, he would remark that a suggestion of the kind was thrown out by Mr. Disraeli,

when leader of the House of Commons, at the time the subject was discussed during the late administration; than whom a more excellent judge of the value of the materials existing in these books need not be desired.

Mr. EDWARD BAINES (Leeds), who attended on behalf of the Yorkshire Union of Mechanics' Institutes, said, that a resolution was passed at a recent meeting of that Union in favour of this object. They had a meeting at Thirsk, at which the 128 Institutes belonging to the Union were represented, and they came to a unanimous decision on the subject. One of the great difficulties which presented itself to the Committee when he gave evidence before it, was as to the mode of sending down these papers; and he would ask Mr. Ewart, if it were not an impertinent question, to tell them if that difficulty had been overcome, and whether they could be sent to the various Institutes without much expense—for the expense of sending them, especially to small Institutions, was felt to be a great difficulty. Another difficulty was, as to who should make the selection of these papers, for they would be completely overwhelmed if they received the whole of them.

Mr. HARRY CHESTER thought it was hardly fair to ask Mr. Ewart to answer these questions. He wished to bring the matter to a close, as far as members of the Institutes' Committee were concerned. He had been requested by Mr. Tufnell to bear a special message to the Conference, to say how much he regretted that he was unable to take part in the proceedings. They were all aware that the original suggestion, so far as it was public, was made by Mr. Tufnell. He said at this Conference last year, that he had given notice to move for the Committee. Mr. Tufnell had paid a great deal of attention to the subject, and had collected evidence both in this country and in America; and he (Mr. Chester) might say, as an observer of what was going on, that he thought the Institutes need not be apprehensive that they would be put to any very great expense in regard to such Parliamentary papers as the Committee might think right to distribute.

Mr. RADFORD (Devonport) said he was examined as a witness before the Committee on Parliamentary Papers, and he thought the course taken by the Committee proved they had considered all these questions. Each gentleman seemed to be anxious to get at the evidence of the best way of conveying these documents, so as to prevent any expense to the Institutes. The question was gone into relative to the selection, and it seemed to be the prevailing opinion that the Institutes themselves should have the right of applying for certain documents which they might consider of special importance to the districts in which they were situated. At the same time it was thought generally right, that in regard to papers of universal interest, they should be distributed without application. He thought they would do right to leave the matter in the hands of the Committee.

Dr. HUNTER (Margate) remarked that it seemed to him that most of the difficulties had been met by the suggestion of Mr. Fox. In the present stage of their information he thought, therefore, they would do well to leave this subject and go on to the next; because until the Report of the Committee was published, it was impossible to enter fully into the matter.

Mr. BRAMWELL (Mayor of Durham) remarked that it would be difficult to make a selection of these papers, because it often happened that subjects would arise unexpectedly on which information was required, and unless they were in possession of the full body of the reports that information could not be obtained.

Mr. MADELEY (Derby) said, it would be very well if

they had Catalogues, but as it was not customary to print an unlimited number of these papers, it might often happen that when they had selected from the Catalogue the paper they wanted, it would be out of print. He thought therefore that it was necessary that there should be a Committee of Selection, to whom it would be best to leave the matter.

The Rev. Dr. BOOTH thought that much of the discussion was useless, as the question having been for months before a Parliamentary Committee they had doubtless made up their minds on the subject.

Mr. H. L. SMITH (Southam), said, that the Parliamentary Papers often contained much valuable matter which could not be gleaned from their titles. By following Mr. Fox's suggestion, and publishing a digest of each Paper, persons would often be helped to information where they did not expect to meet with it.

Mr. G. W. YAPP (Chelmsford), remarked, that Hansards' did publish monthly, during the Session, at a charge of threepence, a numerical List of the Papers published, with the prices attached; and also a subject Index at the end, by which reference could be made. These would not, however, supply the place of the digested indices to which Mr. Fox had referred, as they did not give reference to a vast amount of statistical matter contained in the appendices of the Reports. This required to be supplied; and he thought the *Journal of the Society of Arts* would be a proper medium for supplying it. He would be happy if he could render any assistance in regard to it.

II.—BOOKS, MAPS, APPARATUS, ETC.

The CHAIRMAN said the provision of books and maps was the next subject, and was one with which it was necessary to use a good deal of caution and deliberation, at the present time; because, as they were aware, there was a discussion now before the public as to the propriety of any combination,—whether private combinations, or combinations represented by Government—interfering with questions of trade. It was contended that they ought not to have books cheap, because it might interfere with trade, and that it was not the proper business for Government at all. He thought, perhaps, the Institutions throughout the country might not feel that responsibility on the subject which Government felt, and would probably wish to get books for their Institutes as cheaply as possible, and thus promote the cause of education. They would have seen in the Report of the Committee the suggestion on the subject, and the mode by which it was to be accomplished. He might add, that offers had been made by some of the most respectable publishers, to supply books to the different Institutes at discounts varying from twenty-five to fifty-five per cent. In some cases the answers were favourable; in others the negotiations were still going on, and in some the question was evaded. But the matter for the consideration of the meeting was, whether the proposition set forth in the Report was one which, on the whole, they would like to see carried out or not?

Dr. HUNTER (Margate) thought the subject was one on which no difference of opinion could exist, as it was doubtless important to get books as cheap as possible; but as negotiations were still going on, they might content themselves with expressing a general opinion that the Institutes felt themselves indebted to the Society of Arts for facilitating the obtaining of such books as were necessary for distributing knowledge among the masses.

Mr. JOYNT (Limerick) thought if they could get good books on cheap terms, no one would reject the opportunity; the only question would be, the propriety of acceding

to the terms offered by the various booksellers. If therefore the Society was not in a position to give the answers of the booksellers at present, it would save time to leave the matter entirely in their hands. The selection of books, he apprehended, would be a matter best left to each Institute.

Mr. CHESTER said, the Society would exercise no control over the selection; but if the representatives present thought fit to authorise them to go on with the negotiations, they would enable each Institute to purchase such books as it might select at a cheap rate than could be done without combination.

Mr. SLANEY (Shrewsbury) thought it would be best to leave the matter in the hands of the Committee, and referred to the fact that authors were generally allowed a discount of 25 per cent. on any works they purchased.

Mr. CHESTER said he had a list of the replies already given, as to the amount of reduction offered, but as it was incomplete he would rather not read it. He might just say that they contemplated obtaining something more for the Institutes than the opportunity of purchasing at the usual wholesale prices. The idea was suggested by the arrangement of the Committee of Council on Education, who were thus enabled to supply the schools in connection with it with books at a very reduced rate. It was finding how readily the publishers came into that arrangement, and how those publishers who had not been connected with the arrangement at first were now making application to be so, that had suggested to them that the time was now come when publishers were too wise and too liberal to feel any jealousy about entering even into any arrangement which was for their own interest, if such a motive as self-interest were necessary to induce them to accept it.

Mr. G. OFFOR, Jun. (Hackney) thought this was a question on which there could be but one opinion. The Institutes were bound to purchase books at the cheapest market, and he did not think that any question of interfering with trade ought to influence them.

Mr. WARREN (Royston) remarked that as a bookseller himself he felt sure that no body of men would rejoice more than the booksellers at any arrangement whereby the Institutes would be benefited. He did not quite agree with the last speaker, however, in saying that they ought not to consider whether it would interfere with trade. He did not think the booksellers would offer any objection to the reduction to Institutes if the private trade were not interfered with, and arrangements made to confine the reduction strictly to the Institutes.

The Rev. J. S. HOWSON, M.A. (Liverpool), remarked that the subject before them included maps as well as books, and he presumed diagrams, philosophical instruments, and educational apparatus generally. As regarded books, the question was he thought easy; but with regard to instruments, &c., it was more difficult, as they could not very well describe them sufficiently clearly to the Institutes, and it would be difficult to judge of them without seeing them. He spoke as a practical schoolmaster engaged in teaching boys; and he knew from experience that whilst it was easy to find the best books, it was not so with regard to educational apparatus. He thought it might be of the greatest possible advantage to the whole country, if a permanent exhibition of educational apparatus could be established in London. He had learned more on the preceding evening by looking at the apparatus exhibited at the Mansion-house, than he could have done by reading a dozen catalogues.

Dr. BOOTH said, it was in contemplation by the Society of Arts to get up an Exhibition of Educational

Apparatus not limited to the models produced in this country, but comprising those, many of them much superior, made on the continent, and especially in France and Germany. In fact what the Great Exhibition had done for manufactures they wished now to do for education; they would get the best models from different countries, and then gentlemen interested in the subject would be able to visit the Exhibition, and select such apparatus as they found best fitted for the purposes of instruction.

Mr. POND (Southampton) said, in reference to the question of interfering with trade, the booksellers at Southampton had, unasked, made a reduction to the Polytechnic Institution there; and provided they were properly secured from private individuals getting the books at the reduced rate, he felt sure that booksellers generally would readily agree to the arrangement.

Mr. REDGRAVE said that the Committee intended to take precautions that private persons should not be able to avail themselves of the advantage of the reduction, and booksellers would in point of fact be benefited by books getting noticed in quarters which they did not before reach.

Mr. BUCKMASTER (Battersea) thought the subject of philosophical apparatus was of the utmost importance. He referred to the work of Professor Willis on the manufacture of philosophical apparatus, and said much might be done in the way of making this apparatus by persons connected with Institutes, if they would only endeavour to develop their ingenuity. He had travelled over the Midland Counties, and given a course of lectures on agricultural chemistry with a set of apparatus that did not cost more than 2s. He thought much might be done by the exercise of individual ingenuity; at the same time, he was very anxious that the Society of Arts should have an exhibition of useful philosophical apparatus.

The following Resolution was then moved by Mr. GOWING (Ipswich), seconded by Mr. BRAMWELL (Mayor of Durham), and carried unanimously,—

"That this meeting approve the steps already taken by the Institutes' Committee of the Society of Arts, respecting the cheapening of books, maps, diagrams, and apparatus; and request them to continue their labours."

III.—NEWS-ROOMS AND READING-ROOMS.

The CHAIRMAN said, he would now call their attention to the fiscal restrictions on advertisements, news, and foreign books, so far as these restrictions affected the reading-rooms, &c., of the Institutions.

Mr. BRAMWELL (Mayor of Durham) said it was manifestly for the benefit of the people at large that all fiscal restrictions which retarded the spread of knowledge should be removed, and he thought it would perhaps be most to the purpose if a resolution to the effect, that all fiscal restrictions which imposed difficulties of that character should be got rid of as speedily as possible.

Mr. E. BAINES (Leeds) would have pleasure in seconding such a Resolution. Personally he thought he was interested in the maintenance of the present system of which he individually had no reason to complain. But he did not think that one word could be said in favour of existing restrictions that might not with equal propriety be said in favour of a censorship of the press. As, however, cheapness in literature of every description for every class of society capable of availing themselves of it was the object which he thought they all were anxious to promote, he would have pleasure in seconding the Resolution.

Mr. SLANEY (Shrewsbury) remarked that in reference to newspapers they had one great advantage in the cheapness of postage under the present system; at the same

time he hoped to see all kinds of restrictions on the spread of knowledge removed as speedily as possible.

Mr. EWART, M.P. (Annan), observed in reference to the advantage which the stamp conferred in cheapness of postage, that it had the effect of fixing newspapers in one place; for instance in the metropolis. He would be glad to see an extension of local newspapers as a vast means of promoting the education and instruction of the people in regard to those topics which concerned themselves peculiarly. The present restrictions did in point of fact amount to a censorship of the press, and he firmly believed that the people of this country would not long endure such a system.

Mr. W. J. FOX, M.P. (Oldham), remarked that this large subject could be better discussed elsewhere. He thought the best thing they could do now would be, to give an opinion as to whether they approved the mere reduction of the advertisement duty, or its total abolition. That was a question in reference to which all teachers had a strong interest, not merely because of its effects on the price of books, which was very considerable, but also because of its direct taxation upon instruction, in preventing lecturers from giving such notices, as they might otherwise do, in order to obtain a good audience. It also prevented in various ways the free communication of literary intelligence. It gave him a sense of shame at times when he saw the advertisements of professors of other countries announcing instruction at such low rates as 6*d.* per lesson, to think that for each of those announcements these gentlemen must pay 1*s.* 6*d.* to the English Government. He thought this was a question therefore on which the Chancellor of the Exchequer ought to know their opinion.

Mr. MORRIS S. OPPENHEIM (Jews and General Literary and Scientific Institution) wished to know whether it was intended they should pledge themselves to the abstract principle contained in the Resolution, which involved a question of political economy and of political philosophy. He feared if such a Resolution were pressed in the abstract, it would not be carried, because it involved a question of finance. No doubt all persons who were consumers would be in favour of the abolition of those taxes which affected the articles they used, but it would be very like appealing to self-interest for them to take such a ground.

Mr. BOORNE (Reading), said, they were not discussing the principle in general, but merely in its relation to the working of Mechanics' Institutes. Much of their success depended upon newspapers and books, in rendering their institutes attractive; and these taxes operated injuriously on the Institutes generally, by limiting them in these means of attractiveness. In reference also to announcements of lectures, &c., it often happened that they could not have them inserted, lest by a full announcement they were made liable for the advertisement duty. The question had recently been discussed in the directory of the Institute with which he was connected, and they very heartily welcomed the efforts of the Society of Arts in the cheapening of books, and in removing restrictions from literature generally.

The Rev. H. M. GUNN (Warminster), believed it was a general impression that the great disappointment felt throughout the country in regard to Mechanics' Institutes not having prospered more than they had done, was in a large degree owing to causes in connection with the present subject. In the town where he resided, their Institute, which had before almost dwindled away, had now more than 300 members, although the town had not more than 6,000 inhabitants; and this was

mainly attributable to the newspapers now taken in and although it was found to be a great expense, they still found it their interest to take in these papers. It must be manifest, therefore, that as in their case, so in others, a reduction in the cost of these articles would materially affect the prosperity of these Institutions.

Mr. VALLENTINE (London Mechanics' Institution) thought this was a question of political economy affecting the whole of the community, not Mechanics' Institutes more immediately than the general public; and that in discussing questions like this they were aiming at too much, and by that means would probably effect nothing.

Mr. NELMS (Gravesend) differed from those gentlemen who called this an abstract question. It appeared to him materially to affect the interests of the Institutions, and prevented the diffusion of knowledge generally. In the district in which he resided they had only one local paper, whereas if these restrictions were removed they might have three or four.

Mr. JACK (Newport, Monmouth), thought they ought to devote their whole energies to obtaining the total abolition of the advertisement duty. They could not give publicity to their Lectures on account of this duty. There was also a large number of good books published at low prices of which they had not the opportunity of hearing, because the advertisement duty prevented them being extensively advertised.

Mr. WADE (London Domestic Mission) added some further remarks in favour of the removal of those restrictions, and reducing all kinds of literature to the lowest possible cost. Knowledge, he thought, should be as cheap as bread, and food for the mind as free as food for the body.

Mr. ALLPORT (Camberwell) thought if the movers and seconders of the Resolution would agree to the introduction of a few words into it, giving it a more specific reference to the case of the Institutes, there could be no possible objection to it.

Dr. HUNTER (Margate) thought they had nothing to do with the political aspect of the subject, but should regard it in its social aspect. They were to look at these taxes as something shackling the distribution of knowledge, and therefore ask the Legislature to abolish those imposts which acted as a hindrance to the general well-being of society. The political bearing of the question would be discussed elsewhere. If the Government could remove these taxes, he hoped they would; if they could not, it was certain they would not do so. He had no fear of asking too much; he thought they should ask for as much as possible, and be thankful for what they might get.

Mr. CHESTER thought the subject had taken a wider range than was consistent with the character of the meeting (No, no). He was unwilling to move an amendment, and he thought some resolution might be proposed which would meet with the almost unanimous consent of the meeting. It was important that the Conference should not be of a political but of a general character, and its resolutions should be limited to the bearing of the various subjects under consideration upon the Institutions connected with the Society.

Mr. J. FERGUSON, M.P. (Carlisle), thought that the energies of the Council should be concentrated on the endeavour to obtain the abolition of the advertisement duty. The Government knew what the wish of the public on that point was, and it was ready, with a little more pressure, to yield to the influence from without.

Mr. JOYNT (Limerick) suggested that the Society

should lay its opinion distinctly before the Government, and thus show that literary societies were not altogether open to the charge of not being practical in their movements. The question, he considered, was not so much a political as a social one. If Institutions had the means of advertising to a greater extent, the number of their members would increase, and their means of usefulness be greatly extended.

Mr. GRANT (Dalston) thought it would not be expedient for the Conference to ask Parliament for the entire abolition of the advertisement duty, but simply for the abolition of the duty as it affected literary and educational Institutions. As to the amount of duty on paper, it was so exceedingly small as scarcely to affect the matter of education. He was acquainted with the subject practically, and he believed the amount of the paper duty scarcely ever affected the cost of books. The greatest tax to literary societies was unquestionably the advertisement duty.

The following Resolution was then moved by Mr. BRAMWELL (Mayor of Durham), seconded by Mr. EDWARD BAINES (Leeds), and carried unanimously :

"That this meeting is of opinion that the fiscal restrictions on paper, advertisements, news, and foreign books, have an injurious effect on the Institutions in Union with the Society of Arts, and that the Council be requested to proceed with their investigation on the subject, with a view to the abolition of all such restrictions."

IV.—LECTURES.

The Rev. EDWARD BULL, M.A. (Sudbury), said the Lecture department of Literary Institutions became of more and more importance as those Institutions increased and ramified. The object of lectures was to convey solid instruction, but in too many instances the amusing and the imaginative had been allowed to take the place of the useful and real. What would be thought of lectures being delivered in a literary institution (as he had known to be the case) on mesmerism and phrenology, or on "spectral illusions," when a lecture on optics would have been much better? Something was needed to arrest the growing evil, and he trusted that the Council would direct its attention to the subject. It had no legal influence, it was true, but it had a moral power. It might, perhaps, with advantage publish a list of useful lectures, if not an *Index Expurgatorius*, for the benefit of the different societies throughout the country.

Mr. BECKE (Northampton) suggested that arrangements should be made by societies in different localities as to what lectures they would require, so that they might, with the assistance of the Council, unite in engaging the services of eminent gentlemen in London or elsewhere.

The Rev. J. SAUL HOWSON, M.A. (Liverpool), believed that any attempts in Mechanics' or other Institutions to combine elementary teaching with the instruction of adults would not be permanently successful. He was connected with an Institution, the essential part of which consisted of day-schools for the *bonâ-fide* education of boys; with which were connected popular lectures for the public, and evening classes for adults. While the day-schools were comparatively thriving and improving, with every prospect of indefinite improvement for the future, the other two departments were fading away more and more; the lectures were gradually decaying, and evening classes were not flourishing. He believed there should be always a division of labour in education, and that any institution where day-schools formed an essential part of the system adopted, should not mix itself too much up with other parts of industrial education. One reason, he thought, of the decay of lectures, was the widely-spread notion that

lectures could educate. Persons attended them with great eagerness, expecting to be educated; they were disappointed in their expectations, and went away disgusted. Many Institutions had substituted amusement for instruction, much to the dislike of the more serious and sober-minded of the managers; the management then usually fell into the hands of incompetent persons, and the Institutions became entirely altered in their character, or gradually decayed. A similar state of things had perhaps tended to throw the management of lectures into the hands of persons who had no serious ideas of religion, and thus many religiously disposed people were alienated from the Institutions. Another cause of the decay of lectures was the fact that books could be purchased at a very cheap rate, and be read at home by the fireside; added to which, many persons who formerly attended lectures could no longer do so, as they lived some distance in the country on the different lines of railway. The two last causes were perhaps not much to be regretted. It was quite possible to have an exaggerated view of the value of evening assemblies of young men. Of course it was a great thing to keep a man from the public-house; but after all, the best place for a working man in the evening was by his own fireside, with his wife and children; and the best thing that could be done would be to educate the girls in the domestic duties to which they had to attend in after life.

Mr. BUCKMASTER (Battersea) differed from the Rev. J. Saul Howson, believing as he did that lectures were a very important element in all Institutions. In the small Institution with which he was, and had long been, connected, the lectures had often been the only means of keeping the members together. The reason why there was not sufficient interest felt in scientific lectures was to be found in the fact that the great mass of the population was not prepared to appreciate them, the subject of physical science having been neglected in most of the elementary schools in the kingdom. Another cause was the expensive nature of lecturing apparatus. A lecture on the electric telegraph could not be properly given without an expenditure of 20*l.* or 30*l.* for apparatus. The proper course to be taken was to increase the efficiency of elementary schools, so as to prepare the minds of the rising generation to appreciate the instruction which lectures, when properly delivered, were so well calculated to afford. One gentleman had complained of the delivery of a lecture on spectral illusions. If the lecture had been announced as a lecture on optics, some persons might never have known what it was. Very possibly it was a lecture on optics, and if the public was deceived it was a very agreeable deception, involving no great moral wrong. He thought the Society of Arts would do well to have a list of lecturers whom they could recommend to country societies, who would then be relieved of some difficulty in the choice of proper men. The main fault of lectures hitherto was that there had been no kind of organization; and he hoped the Council would endeavour to recommend some means whereby that evil could be remedied. He did not object to the mixing the entertaining with the instructive, but believed that much good often resulted from the combination.

Dr. LYON PLAYFAIR said, there was so much good sense in the remarks of the last speaker, that he was anxious to convert them into a living faith in the mind of the meeting. When Mechanics' and Literary Institutions were first established, they were established with the definite object of giving systematic instruction in the various arts and industries which were of importance to

this country. It was found necessary by the managers of those Institutions to depart from that systematic instruction, for the very simple reason that secondary instruction in science and art was attempted before primary instruction was afforded. Their constituents consequently had no settled habits to keep them together; they were then given a variety of instruction and amusement. The number of members was thus increased, but there was a decrease in the average time which each person remained in the Institution. It was therefore of great importance, if the Institutions were to be made successful, that they should endeavour to infuse a knowledge of science into the elementary schools, so as to raise up a class of men who in a few years hence would give life and vigour to the Societies with which they might be connected, so as to prevent them from languishing or decaying. Then lectures would no longer be unprofitable, but would succeed admirably, and bear excellent fruit. He believed there was a great desire on the part of large numbers of artisans to acquire, even now, that systematic instruction which would enable them to value the lectures which were given in the various Institutions. He would mention one example, which came within his own experience. He was attached to the Metropolitan School of Science. Last winter a systematic course of lectures was delivered to artisans with the greatest success; and during the present year a similar course, but still more systematic, had been delivered by eminent professors. An advertisement was inserted on the Monday morning in the *Times*; by Tuesday, at 12 o'clock, all the tickets to be disposed of (600) were applied for; and by Tuesday afternoon, more than double that number of applications had been received. He believed that all the Institutions in the country that had faith in the potency of systematic instruction were flourishing; he knew of many which contained 700 or 800 young men who were going through regular systematic courses of instruction, endeavouring to obtain that knowledge which they did not obtain in elementary schools. He was anxious that the representatives should go back to their various localities with the belief that their Institutions would not finally succeed, or do that which they anticipated, unless they introduced into their elementary education that knowledge of science which was necessary to enable men to understand the works of God—to enable this country to occupy her position as an industrial nation.

Mr. W. J. Fox, M.P. (Oldham), expressed his concurrence in the remarks of Dr. Playfair. The Institution with which he (Mr. Fox) was connected had had no lectures during the past year, having generally found them desultory, unproductive, and expensive. The members, young men who were earnest in their pursuit of knowledge, acquired a distaste for such rambling dissertations. But after all that had been said about the decline of lectures, they formed too valuable an agency upon the public mind to be lightly relinquished. What was wanted was organization, springing from a central point. If the Society of Arts could designate certain qualified persons as competent lecturers, and arrange certain circuits where courses of lectures could be given by them, there might be a continuous supply of instruction afforded throughout a great part of the country.

The DEAN OF HEREFORD said he attributed most of the success which had attended his educational exertions to the fact of his having made the knowledge communicated to bear on the practical duties of life. He had no doubt that the lectures contemplated by the Society of Arts would be most successful. It was true, as had

been said, that a person might derive useful knowledge from reading at home; but there were many experiments which he could not conduct himself, and with which he could only be made acquainted in the lecture-room.

Mr. LOGAN (Cork) alluded to the advantages resulting from the delivery of lectures, instancing the case of Cork, where he said a great improvement in the mental habits of the people had taken place in consequence of the lecture system introduced by Professor Jardine, in conjunction with the establishment of classes for the members. Mere popular lectures he considered were of little value as compared with systematic courses, containing solid and useful instruction.

Dr. BENSBACH (Galway), said that in cities like London, where there were so many places of amusement, literary Institutions need not combine light entertainment with instruction; but in small towns he thought the two must be generally linked together. The lectures and entertainments should always be adapted to the class of persons addressed, and he thought much benefit would result from a combination among the different institutions of the country, with a view to regular courses of lectures by eminent professors.

Mr. JAMES HOLE (Leeds), said the Yorkshire Union had tried for some time past the system of engaging gentlemen to deliver courses of Lectures at different Institutions within its district; but had failed, chiefly in consequence of the inability of many of the poor Institutions to pay the necessary expenses,—amounting at least to three or four guineas per lecture. All efforts at combination and organization in regard to the delivery of lectures would, he thought, be an utter failure. Some of the Yorkshire Institutions were kept in debt for a number of years from a single outlay for a course of scientific lectures. Finding a difficulty with regard to paid lecturers, the Union had lately recommended the plan of gratuitous lectures. The names of persons who were willing to deliver gratuitous lectures, and the subjects, were published; and from this list some Institutions were enabled to arrange for an entire course without any cost for lecturers beyond that of occasional travelling expenses.

Mr. SLANEY (Shrewsbury) recommended the delivery of Lectures on subjects connected with the sanitary condition of the people—ventilation, drainage, the choice of houses, and the like; and offered 50*l.* for apparatus which should be available for illustrating that subject. He anticipated the best results from such lectures, delivered by persons accredited by the Society of Arts, as there were many little scientific contrivances tending to promote the health of the people which could be adopted by them with but little cost, when they were once explained and recommended to them.

The Ven. ARCHDEACON FREER (Hereford) urged upon the Council the expediency of adopting some means by which country societies could be supplied with professional lecturers; and expressed the great obligation laid on the friends of education by the Dean of Hereford in his zealous labours in the cause—labours, he said, which had called numerous schools into existence, and brought the means of education within the reach of the poorest of the agricultural population in his district.

Mr. GOWING (Ipswich) hoped that lectures of a miscellaneous character would not be lost sight of; while he trusted that they would be often followed by special lectures to impart more specific and useful instruction. The general lecture he regarded as a stimulant, as giving the first impulse which induced persons to attend the special lecture. He recommended applications to be made to scientific or literary gentlemen to deliver lectures at

the Institutions in their various localities; and that assistance should be given to them in the preparation of diagrams by any of the members who could render it.

Dr. BOOTH thought the meeting need not discuss the abstract value of lectures, but would do better to consider the expediency of giving the Council instructions on the subject of providing lectures for Institutions during the ensuing year. The Institutes' Committee had patiently considered the subject for many weeks, and had received from different quarters many propositions—some good, and some attended with insuperable difficulties. The two principal difficulties with which the Committee had to deal were, first, the want of funds; and secondly, the reluctance felt by the Committee to do anything which might seem to interfere unduly with the management of local Institutions.

Mr. E. HALSALL (Bristol) briefly adverted to the subject of elementary schools in connection with Mechanics' Institutions.

Mr. R. W. KENNARD (Falkirk) said he should like to move a resolution to the effect that a staff of lecturers be recommended by the Society of Arts, who, from their attainments in science or literature, would be entitled to general confidence; each Institute being allowed to choose its own lecturers from this staff without being necessarily restricted to it, and each, of course, arranging the mode by which the remuneration and expenses should be defrayed.

Mr. R. E. F. SMITH (Portsmouth) would second such a Resolution, and urged upon the Society to continue its exertion in procuring a good staff of lecturers for the benefit of the country Institutions.

Mr. ALBERT BEETHAM (Lymington) called attention to the suggestion made in the Appendix to the Report, to have lectures prepared in London, and sent to country towns for delivery, where Institutions could not afford to pay the expenses of a professional lecturer.

Mr. CHESTER thought the resolution proposed to the Conference too vague in its character to be of any practical utility. The Council was desirous of ascertaining from the meeting how the combination could be worked so as to produce the desired result. The Society was asked to supply a list of lecturers—that it undoubtedly could do: but that might also be done by any intelligent person living in London. The Council needed some power to act definitively and effectually. It had been suggested that a staff of lecturers should be engaged at regular salaries, and sent round to the different Institutions. Was that a measure the Conference would desire to adopt? (No, no.) Or would the different Institutions arrange among themselves as to what lectures they wanted, and then set about supplying the necessary funds? If some specific plan of that kind could be agreed upon, the Council would endeavour to carry it out.

Mr. J. F. HOLLINGS (Leicester) said that no kind of union could be established with reference to lectures between the different Institutions in the Midland Counties, and he feared that such a combination would not succeed elsewhere. He believed that though there might be for several years a great desire to attend scientific lectures, the interest would soon flag, and the attendance fall off. The best plan, he thought, would be to let the Institutions alone, and to leave the solution of the problem to time and the hour, waiting patiently till the elementary schools had produced a generation with a greater taste for scientific pursuits and attainments. After all, the managers of Institutions were obliged to conform to public opinion; otherwise they would incur debt, and the Institutions would decay. The Institution

with which he was connected had done away with lectures except such as were given gratuitously; and it was now recovering from its difficulties, and was in a state of comparative prosperity.

Mr. RADFORD (Devonport) thought that to give up popular lectures was the surest step to take towards the dissolution of the Institutions. They were not met to discuss the desirability of lectures, but to suggest to the Society any means by which they could aid Institutions in the country. The Council might render some assistance, but he warned the representatives not to expect too much from it, and advised them to rely more on their own exertions. Country Institutions were often put to a great expense in the carriage of books and apparatus from London, and the payment of the travelling expenses of lecturers. He thought the Society would do well to take that matter into consideration, and apply to the various Railway Companies in the kingdom to grant a reduction of fares in the case of lecturers passing to and from Institutions for the purpose of delivering lectures. Recently the Society with which he was connected paid 30*l.* for two lectures, the lecturer travelling by first class, and having to bring with him a large amount of apparatus. He thought much benefit would attend occasional local conferences of Institutes in different parts of the country, and would recommend them to the consideration of the Council.

Mr. ALLPORT (Camberwell) suggested that the Council should prepare a list of lectures on different subjects, attaching the prices at which they might be obtained, for the guidance of those Institutions where a difficulty was felt in the selection; and if an offer could be made to supply such lecturers at reduced rates in case several Institutions would combine, he had no doubt that frequent combinations would take place.

Mr. W. NICHOL (Liverpool Mechanics' Institution) thought the Society could simply act as a corresponding agency to assist those Institutions who could come to an understanding among themselves as to what lectures they required, and what they were willing to pay.

Mr. WINTER (Grantham) said that the Society which he represented relieved itself from its pecuniary difficulties by exhibiting an instructive diorama for six days, which brought in more funds than were lost in a whole course of lectures. He would suggest that the Council should have such a diorama for the benefit of such Institutions as would like to exhibit it to their members.

Mr. YAPP (Chelmsford) thought there was a greater demand for lecturers in the southern and midland counties of England than the gentlemen from Yorkshire, arguing from their own experience, seemed to imagine. The great difficulty that was felt was that of engaging suitable lecturers and selecting fitting subjects; and in these matters the assistance of the central Society might be very advantageously rendered. The object, he thought, should be to collect morsels of information from different quarters, and send them out again in an available form. Every Institution should consider it its business to tell the Society of Arts what it knew about lectures; and the Society of Arts should put all the information it obtained in a simple form, and through the medium of the Journal disseminate it again throughout the whole country.

Mr. EDWARDES (King's Lynn) rose to move a Resolution of a general character as the only one that could express the opinion of the meeting. It appeared to him that the Society of Arts had done its work; the question was, what was to be done by the provincial Institutions?

Mr. JOYNT (Limerick) thought a great deal of time

had been needlessly spent. The endeavouring to find out a specific line of action for all the Institutions in Union with the Society, reminded him of the process by which some persons huddled a lot of patients in a hospital, and endeavoured to cure all their diseases by one remedy. It was quite evident that one Institution was poor, another rich, and that there was a vast difference in their circumstances; and however respectfully he listened to the suggestion of Mr. Chester, he believed it to be wholly impracticable if applied to all the Institutions. He thought, therefore, that they should confine themselves to the simple expression of their agreement with the present course of the Society—thanking the Council for the steps they had already taken, and desiring that they might be continued. No doubt the opinion of the Conference was what was so ably expressed by Dr. Playfair—that lectures in any Institution or in any locality would be of very little value, unless a preparatory and systematic mode of instruction were given to the parties to be benefited by them. In that way alone, sound knowledge could be disseminated amongst the members resident in any locality. He trusted that these were the principles which the Conference would support.

Mr. CHESTER said the Council would no doubt be perfectly willing to go on as before, and do the best they could, if that was the wish of the meeting; but what he was very desirous that the Conference should not do was, to pass a resolution that the Society of Arts should simply publish a list of lecturers.

Mr. JONES (Epsom and Ewell) supported the Resolution. He did so because he believed it embodied a vote of confidence in the Committee, and expressed all that could be done on the present occasion; namely, the fullest confidence in the labours of the Council, sympathizing with them in the innumerable difficulties which surrounded the question of lectures, and desiring them to issue, as before, a list of subjects as suggestions, the Institutions forming themselves into circuits, and jointly reporting to the Society of Arts the subjects they required and the terms they could afford.

Mr. CONINGHAM (Brighton) said the whole question might be summed up in a very few words. Two things had to be contended with: want of funds, and the difficulty of co-operating. The second point was a troublesome one. There appeared to be a sort of jealousy of central authority; but he was convinced that if there were a satisfactory understanding between the central and local Institutions, a very important benefit would be derived. Because small Institutions in Yorkshire had not succeeded in carrying out the co-operative principle, it was no reason why the larger and wealthier Institutions connected with the Society should fail in doing so. He was confident, from his experience in Brighton, where the lectures had been attended, on an average, by 500 people, and had, he believed, quite covered their expenses, that in the larger towns a most efficient system of lecturing might be organized.

Dr. HUDSON (Manchester) said that with reference to the Union of which he was himself the founder, comprising the four counties of Northumberland, Cumberland, Durham, and Westmoreland, in all those counties lecturing as a general system had passed away, and that it was entirely useless for the Council to fritter away their time in endeavouring to supply lecturers. But there was a very great and a growing want on the part of the young working men in the Mechanics' Institutions, to have good lectures, provided they could be carried out in a pleasant and amusing, as well as in an instructive manner, and they could obtain an extemporaneous

lecturer, who could speak at once to their capacities. So that although the lecturing system had passed away, if they could begin again, and do as they had once done with Dr. Lardner—if men of such transcendent talents as Dr. Playfair could be secured to go and lecture at those Institutions, he (Dr. Hudson) was quite sure that a new taste would be created.

Mr. JAMES BOORNE (Reading) said the call for Lectures had evidently passed from one county to another, for there was certainly a great demand for them in the place from which he came. The lecture courses there had not only been the main-stay of the Institution, but had also brought a large addition to its funds. Dr. Booth had said, "What is it you want?" There was a saying that lecturers were like ginger-bread nuts,—they could not be tried before they were bought; if, therefore, lecturers could go to the various Institutions endorsed by the Society, it would be of great advantage to them. They wanted the Society to do with lecturers as it had done with books,—to buy them at wholesale prices, and distribute them amongst the constituents. If he might mention names, there were such lecturers as Mr. Dawson and Mrs. Balfour, who were popular at Reading, in different senses. One lecturer might be exceedingly popular, and yet not bring so much money into the exchequer as another who was not quite so popular; one might be popular with the members, and the other with the community at large, who would on his account come to the Institution, and add to its funds. It seemed to him that the Society of Arts could do as the Freehold Land Societies had done,—buy up the lecturers wholesale, so that instead of paying a competent lecturer three or four guineas, the Institutions might secure his services for something like a guinea and his expenses.

Dr. PRIOR PURVIS (Greenwich) said, his experience of lecturers very much agreed with that of the last speaker. The Institutions required something of a certificate of character with the lecturers. What was generally wanted, was a series of lectures; but there was a great difficulty in obtaining them, because there were no means of knowing the character of each lecturer. The opinion was usually taken from private, and also from newspaper reports, which were frequently very fallacious; so that every second or third lecturer was often found quite the opposite of the Committee's expectations, and this gave a degree of coldness to the remainder of the course which it required three or four months to get rid of before the members were in a disposition to go and hear another stranger. This was, no doubt, to be attributed, in a great measure, to a want of confidence between one Institution and another, in giving characters to the lecturers, which often misled those by whom they were engaged.

Mr. HEMINGWAY HARRIS (Mayor of Cambridge) said, he had wished to second the motion of the gentleman behind him. One gentleman had observed, that a good deal of money had been frittered away in lectures. Such being the case, it appeared very desirable that, as there was a growing interest in lectures in some parts of the country, the money should no longer be frittered away, but be expended in a proper direction by means of the Society, so that the Institutions might really receive their value for their money. The Institution which he represented was, perhaps, rather peculiarly situated. He had occupied the position of its Hon. Secretary for twenty years. At the commencement of that period, there were many professors in the University who granted their assistance; but when the Institution was thought to have got out of its leading-strings,

the professors gradually retired, and it was now altogether without lectures. The members were, however, very anxious for them, and would do all they could to support them.

The CHAIRMAN said, that as the Conference had been upwards of an hour and three-quarters on the subject of lectures, and thirty members had uttered their opinions on it, almost all centering on one point, which was, that Institutions generally desired to have lectures, and were anxious that the best possible arrangements should be made for that purpose, he thought that perhaps it would not be considered ungracious if he submitted to the meeting a resolution which, without disparagement to the three or four which had been proposed, might be found to meet the case. He believed he might say that the Council, and the Institutes' Committee, would do their best to make the arrangements which had been desired. He would just glance at one or two points that had been mentioned. Some had imagined that the lectures could be promoted by an annual grant; but he thought that, in their circumstances, an annual grant, whether from Government or elsewhere, would be most detrimental. Another gentleman had suggested that the Society should squeeze the railways; but he considered that would be equally degrading and impracticable. Another had intimated, that it was hopeless to expect the people to pay for the lectures; but surely a labourer, who had by elementary instruction been enabled to appreciate them, would not object to deny himself the price of a pint of beer, which from an audience of 500 would pay a first-rate lecturer.

The following Resolution was then moved by Mr. R. W. KENNARD, of Falkirk; seconded by Mr. HENRY EDWARDES, of King's Lynn; and carried unanimously:

"That this Conference do express its confidence that the Society of Arts will make the best possible arrangements for facilitating the supply of Lectures to the Institutions in Union; and does not deem it expedient to attempt to define the modes by which such arrangements should be made."

V.—CLASS INSTRUCTION.

The CHAIRMAN, in introducing the next topic, the importance of establishing classes for instruction, said he believed it could be shown that the system had been in some cases the salvation of the largest Institutions.

The Rev. J. SAUL HOWSON, M.A. (Liverpool), said that if lectures were turned into class-instruction, and made educational instead of merely amusing, he thought they would instantly become useful. He cordially agreed with Dr. Playfair in the importance which he attached to elementary instruction, to prepare the people for scientific lectures. If they wanted the fire to burn they must light it at the bottom. He could bear out an assertion which had been made, that the schools of the Mechanics' Institution in Liverpool had been pre-eminently useful.

Mr. W. H. I. TRAICE (Leeds) said he was rather surprised that two questions, so closely allied as the present and the preceding, had not been amalgamated. The whole of his experience of Mechanics' Institutions, extending over a period of twenty years, boy and man, was, that a signal defect in them had been the not making it essential that every one who joined them should either give proof that he already possessed a certain amount of elementary instruction, or be willing to enter upon it. If the Society could make arrangements for this purpose, by devising some plan for organizing normal schools or otherwise, there would be in almost all the Institutions the means of paying for it, though not at first perhaps all it was worth. In the Leeds Mechanics'

Institution there was a class of about 150 mill-hands, who certainly did not come in the neatest trim, though it was hoped they would soon learn to do so; they paid their 6d. every fortnight; and he regretted that the Institution could do no more than take advantage of the teachers in the day-school, who gave them instruction in reading, writing, and arithmetic in the evening. The class was not advertised, for if it were they would not know what to do with the applicants for admission. He was quite convinced that if they went on with this elementary instruction, and made the people believe that reading and writing were only the means of learning something more, more good would be done than could possibly be done by lecturing. A lecture might occasionally be useful as a stimulant; but the real work of instruction must be done in the class: and this must be the starting-point, if Mechanics' Institutions were to accomplish the purposes for which they were designed,—to aid the mechanic in his trade, to elevate his position, and to make him a wiser, a better, and a more useful member of society.

Mr. GOWING (Ipswich) said he cordially agreed with the remarks of the last speaker. In the Institution with which he was connected they were unsuccessful for a time; but during the last two years they had been perfectly successful in procuring competent teachers, and also a constant attendance at the classes. But they had suffered from the want of funds. It could not be expected that teachers would come forward quite on the voluntary principle, though the small fee of 6d. had been sufficient to secure for two or three of the classes a gentleman who understood eleven or twelve languages, and was competent in several branches of science. The members of the Institution paid 10s. a year; 2s. 6d. extra was charged for classes, and non-members were admitted to them for 5s. The Institution could support itself in every other respect, but it was unable to furnish the additional sum required for carrying on this department. The expenses were 50l.; whereas they could not obtain more than half of that sum; consequently, he did not see how they could pay their way with the present attendance, except from some extraneous source.

Mr. CHESTER thought every gentleman at all conversant with education must be aware that the real stiff work of education was to be done more in the classroom than in the lecture-room; but at the same time he felt perfectly convinced that lectures, even desultory ones, were really useful, if too much were not expected from them. In a large number of Institutions it had been found quite impossible to maintain classes; he had found it so in his own Institution. But he rose principally for the purpose of saying that he hoped means would be found, not only of improving the status and generally developing and increasing the resources of the Institutions, placing them in a position in which they could better deal with these matters, but that the Society would be able to offer something more nearly approaching to the character of a direct award to those who attended the classes.

Mr. MADLEY (Derby) suggested that the Society might possibly, at some future period, render great assistance to various Institutions by providing them with masters for the classes,—men of talent that they could afford to pay.

Mr. HOLE (Leeds) stated that the Committee of the Yorkshire Union had recently obtained statistics from various Institutions, the result of which was that not above one-fourth of those from whom they obtained the statistics were receiving class instruction, and of these, four-fifths were receiving elementary instruction. He

might mention another—the Huddersfield Institution was frequently pointed at in Yorkshire as the best in the whole country, except, perhaps, the Edinburgh School of Arts. In the Edinburgh Institution, about half the income was received from the gentlemen in the neighbourhood; and in the Huddersfield Institution about 150*l.* out of 600*l.* It was the duty of the rich to subscribe towards the education of those who had not received the same advantages as themselves; but unless some means were devised for obtaining funds, the majority of the Institutions could not procure paid masters, and unless they did this they could not depend upon having qualified persons.

The DEAN OF HEREFORD said it was quite clear that Mechanics' Institutions throughout the country were not generally prepared to receive any great amount of instruction from lectures under the present system; still, he was of opinion that the reason they had hitherto failed had been from the want of elementary instruction.

Mr. GRANT (Dalston) said he had been connected with three or four Institutions, and he had found one particular class succeed in a particular neighbourhood, and another fail. He thought that if classes for instruction were provided, suitable to the particular circumstances of the members, they would be very ready to join them.

Mr. W. NICHOL (Liverpool) wished to state a little of his experience in reference to an evening-school connected with the Liverpool Mechanics' Institution, where 400*l.* or 500*l.* a year was paid in salaries to teachers. It was for a long time the practice to admit to that school the apprentices and sons of members, at a payment of 5*s.* per annum. The school met four nights a week, for two hours each night. The attendance was very irregular, sometimes not more than one in four; and the Institution did not obtain near the amount necessary to meet the expenses. Some time ago, in looking over the affairs of the Institution, they determined that this state of things should no longer be maintained. They looked to the characters of these who attended, and formed a set of classes for instruction in reading, writing, and arithmetic, at 2*s.* 6*d.* a quarter, and another for the higher branches at 5*s.* This plan had been attended with great success.

Mr. BUCKMASTER (Battersea) said, every one must feel the necessity of having men to manage the elementary schools who were properly qualified for their office; for it was well known that many were ignorant of the simplest questions of physics who could solve readily the most difficult mathematical problems.

The Rev. W. TAYLOR JONES (Romford) said he had found elementary classes of great service among the working men in his neighbourhood.

The Rev. H. FEARON (Loughborough) said he thought a general Resolution like that suggested by the Dean of Hereford was the only one that could be passed; for if the Society of Arts could not assist the Institutions much on the subject of lectures, they could not on that under discussion, which was one of the most important matters with which they were concerned. Many lecturers came to the country Institutions who were utterly unintelligible to the audience. The evil could not be remedied until the labouring people were better educated. There were two Societies in Loughborough, one for the upper tradesmen, and the other for the working classes; the first was well attended, while the second was comparatively deserted, though free admission was offered.

The CHAIRMAN, in putting the Resolution, said that although perhaps the Society of Arts, as a central Institution, was not able to do much in the way of providing efficient schoolmasters, there was another central Insti-

tution, which they were properly very shy of,—namely, the Government—that had taken steps for training teachers, and he would show how gentlemen might obtain assistance in that direction if they were so disposed. The Dean of Hereford could tell them of a master who had been sent there by Government, and who really made an adequate and handsome salary. The Government had no more to do with him than to guarantee that he should not be a loser by the experiment, giving him 5*l.* in his pocket, and paying his travelling expenses upon condition of his furnishing a report. This plan had been tried at Durham, Swansea, Caermarthen, Dudley, and various other places; and Institutions might avail themselves of the same assistance. In fact, they might have some of the advantages without going so far as to ask for a master. The department with which he was connected had collected together materials for teaching drawing and colouring, and were collecting, through Dr. Playfair, materials for teaching physical science. These could be obtained at half the cost price. This was a privilege which he believed would only last this year, and the supply must now stop for six weeks on account of the very large number of those who wished to take advantage of it.

Mr. JOYNT (Limerick) said the system which had just been propounded was wholly opposed to the National system in Ireland. He did not see why instruction in Art should not be given to the pupils in the National-schools on the very same terms that they were taught the common branches of knowledge. He believed the true dignity of any Institution was its being self-supporting. The system which had been laid down would, however, if carried out with any severity in Ireland, prevent the full development of a taste for art among the humble, and especially amongst the middle and upper classes, who were as much in need of it as the lowest.

The CHAIRMAN said the Government was prepared to send masters into the schools referred to by the last speaker. With respect to the town represented by him, it had done much on the self-supporting principle, and had prospered much more than the other Irish towns which had acted on the subsidized principle. The same might be said of Waterford.

The following Resolution was then moved by the Very Reverend the DEAN OF HEREFORD, seconded by Mr. F. H. BASTARD, of Blandford, and carried unanimously:

"That the infusion of science and art into elementary instruction is required by the people generally, and is desirable for the ultimate success of Mechanics' Institutions, which could then advance science and art more efficiently by systematic class instruction."

Subsequently the following Resolution was moved by the Rev. JOHN SAUL HOWSON, A.M., of Liverpool, seconded by Mr. JAMES HOLE, of Leeds, and carried unanimously:

"That it is desirable that the training-schools of this country should introduce into their courses of study a more thorough knowledge of the natural and physical sciences, and a system of instruction in art; and that the Council of the Society of Arts be requested to forward this Resolution to the President of the Council of Education, and to the various training Institutions."

Mr. CHESTER said he was not there to speak for the noble Lord, the President of the Council, nor to represent the Government in the matter; but having been, ever since the establishment of the Committee, one of its officers, he naturally felt a deep interest in the subject. The meeting would be greatly mistaken, if it supposed that there was, or ever had been, any disinclination of the Committee to advance the object which had been referred to. It was not the policy of the Committee to endeavour to control and direct the education of the country, but simply to supplement and stimulate

local efforts, in the way of suggestion and pecuniary assistance. Certainly, it had not made the progress which he should desire to see it make, but it had made some progress; and he could not allow his friends, Mr. Cole and Dr. Playfair, to run away with all the credit, because, long before their Board was thought of, that was an object which the Committee of Council had in view. It had been making efforts during the last few years, not only indirectly through the reports of inspectors, but directly through the training schools themselves. The thing had already taken root in a great many of them, and some good effects had been produced.

The Rev. A. BATH POWER, M.A. (Norwich), said he appeared not only as a representative of the popular Institutions of the city of Norwich, but as the principal of one of the training Schools indicated in the last Resolution. He had conducted its affairs for thirteen years; it had carried out their arrangements under the Committee of Council on Education, and was about to extend its operations in many important particulars. In the boys' school with which he was connected, more particularly, physical science formed part of the daily routine. The system was not thoroughly carried out, for want of the facilities that had been named; but he trusted they would soon be able to go farther into the practical instruction.

VI.—STATISTICS.

The CHAIRMAN said, they now came to the question of statistics, which was one in which the interests of the Society, as well as the Journal, were much concerned. The Journal was started mainly with the view of enabling the Institutes to have an organ for communicating their opinions; but he was sorry to say that it had been very tamely responded to; and unless it were better supported, the Society of Arts could not be expected, out of its Exchequer, to pay some 200*l.* or 300*l.* per annum for an organ which was not appreciated. Its circulation would depend upon its merits; if it were made a popular thing the public would have it. But if it was not wanted by the members it would be discontinued.

Mr. GOWING (Ipswich) said he thought the Journal so dry that there was very great difficulty in getting through it, unless some specific information were required. If it had been managed like the *Athenæum*, or any Journal intended to pay, it would have been much more useful.

The Rev. J. SAUL HOWSON, M.A. (Liverpool), had taken in the Journal from the first number, through seeing it advertised, before he became a member of the Society. He had since read it very diligently, and it had been of the greatest practical use to him; indeed, he did not know where else he could have obtained a great deal of the information he had picked up. He thought the Council should not be discouraged; it was not to be expected that any periodical should make its way immediately; but he could not help saying that it would be a very great disaster if the Journal were discontinued. The specific character of its information certainly ought not to be considered an objection.

Dr. HUNTER (Margate) said he believed the Journal was fully entitled to their most cordial support, diffusing as it did the most valuable information. He might refer especially to the very able discussions on Photography, and the very elaborate history of cotton and paper printing which had recently appeared. He was quite sure that it contained a degree of information which could not be obtained, as far as he knew, from any other source.

Mr. COLEMAN (Wandsworth) said the members of his Institution read the Journal with a great deal of

interest and pleasure; and he could only wish that other journals were read with equal satisfaction. While that lay on the table well marked, and apparently well read, by its side lay the *Mechanics' Magazine* hardly touched. He thought the reports of the lectures and meetings of various scientific societies might be increased with advantage. The Friday evening lectures at the Royal Institution were particularly interesting.

Mr. SQUAREY (Salisbury) said it would be a source of great regret to the members in his district if the Journal were discontinued.

Mr. W. H. J. TRAICE (Leeds) said it was always a difficult matter, as the accounts of the various Institutions were frequently kept by honorary officers, to procure the statistics more than once a year; but he believed they might in many instances be obtained quarterly. They might get the printed reports, and apply specially for any further information that might be required. He was very much pleased to hear the tone which the conversation had taken on the subject of the Journal. When it first appeared he suspected that it might not be possible to find any proceedings of interest to carry it on; but he rejoiced to say that material had been obtained in connection with the Society of Arts, which made the Journal so interesting as to induce all persons to read it, while it gave at the same time such information as was required by the members. He was not very anxious to see from week to week reports that Mr. A. B. gave a very interesting lecture, the Mayor of so-and-so in the chair, and the audience were very deeply impressed by the experiments; he was one of those who did not profess to be much exhilarated by statements of that kind, therefore he would be satisfied with a small number of them, and he hoped the Society would only refer to such lectures as were really important.

Mr. BUCKMASTER (Battersea) said he did not think the Journal had been appreciated so much as it ought to have been, because it was so cheap. The members not only received a copy themselves, but the Institutions with which they were connected received one as well. If the individual or the Institution had to pay some sum, say 5*s.* a year, for the Journal, it would be more thought of. With regard to the reports of lectures and meetings, he believed they were generally interesting to the members in the particular localities in which they took place.

VII.—LEGAL POSITION.

The CHAIRMAN then introduced the next subject, which he considered of great importance—the Legal Position of Institutes.

Mr. CHESTER said the subject was not only important, but one of very considerable difficulty. He wished the meeting had been as numerous now as it was when it first commenced. It was the intention of the Institutes' Committee to prepare and lay before them the heads of a Bill intended to remove some of the evils of which the Institutions complained, in reference to their legal position. They had before had the subject so well ventilated by Mr. Tufnell, that it was thought to be of advantage to have his opinion at the present time. Mr. Tufnell concurred with the Committee in thinking it expedient that the subject should be brought before a Committee of the House of Commons, and fully investigated; but he hesitated to make the motion himself, because he thought it expedient that the Chair of the Committee should be taken by a lawyer; he undertook to consult with his friends, and report to him (Mr. Chester); but owing to the illness of Mr. Tufnell, which they all lamented, no report had come to hand. The Committee had presented a Report

on this subject (*Vide* No. 11 of the JOURNAL, page 124), which referred to the exemption of local rates, legal disabilities with regard to building-lands, the laws of mortmain and partnership, and the position in which the Institutions stood in reference to the Act relating to disorderly houses. He did not know whether, with Prince Albert at their head, their's was not an illegal combination. Their position was not very perilous, for no proceedings could be taken except by the Attorney-General, and no Attorney-General would be likely to commence them. With regard to the exemption from local rates, it seemed to him to lie rather in the way of the other two points. It was thought that it would be expedient before they went to Parliament to obtain facilities for conveying and holding land and buildings for the uses of the Institutions, and for setting them free from those penalties to which they were liable, that they should clear up the question of local rates. They were all aware that it was the intention of the Legislature apparently, so far as any intention could be gathered from an Act of Parliament, to exempt Societies from local rates; but that Act was attended with considerable embarrassments, and Societies, which were probably intended to be exempted, were not exempted. This subject of exemption, however, was one rather for the Institutions themselves to determine than for the Society of Arts; and they particularly invited discussion in the Journal, but he believed no communications on that subject had appeared, except one letter, which was written by himself, in which he expressed his opinion that it was not at all for the interest of the Institutions that they should be exempted, and recommended that they should rather make the unusual communication to the Chancellor of the Exchequer, that they were prepared and desirous to forego the exemptions. He thought the real dignity of the Institutions could not be promoted by their putting themselves in *forma pauperis*. The whole system of exemptions from taxation was altogether unsound and objectionable, and he should be glad to see them taken from all those large Institutions which now availed themselves of them. But he only gave these opinions, of course, individually, and any gentleman would be at liberty to make any remarks upon the subject.

Mr. GAEL (Cheltenham) thought he should betray the interests of the Institution he came there to represent, if he did not express his thorough disagreement with the principles just enunciated. He did not think it necessary to go into the large and general question of exemptions; but if there were any exemptions at all, Institutions such as that with which he was connected should ask to be exempted. If Government thought proper to bring churches and chapels under the rule of taxation, let them do so; but he thought Institutions which had no other object than the improvement of the people, ought not to be allowed to be an exception.

Mr. OPPENHEIM (Jews' and General Literary and Scientific Institution) said, if it was not inconsistent with their dignity to apply to Parliament for Blue Books, and to booksellers to reduce the price of their books, and to lecturers to reduce their terms for lecturing, it could not be inconsistent with their dignity to apply to Parliament for exemption from local taxation. His Institution would consider it a very great boon. Nearly every one of them had been charged in every petty court in the metropolis; and they were now incurring 20*l.* to 35*l.* per annum more than they incurred many years ago, since the decision in the Greenwich case.

Mr. HALSALL (Bristol) said the local rates in his district amounted to 6*s.* in the pound, and the Institution,

when finished, would be rated at about 200*l.* a year; this made a serious item, and led to the expenditure of funds which would be otherwise employed in conferring additional benefit on the class of persons for whom the Institution was provided.

Mr. VALENTINE (London Mechanics' Institution) said, perhaps no Institution had had more to contend with in this matter than that with which he was connected. They used to compound with the parish; but after the decision in the Greenwich case, they had to pay a much larger sum. The benefit of the exemption would be to them greater than that which would be conferred by the reduction of the stamp or any similar duty.

The Rev. H. FEARON (Loughborough), said he thought the time was coming when all exemptions would be viewed with more and more suspicion. It was extremely difficult to frame an Act of Parliament to include certain exemptions, and not to include others which were never meant. No doubt if some of the Institutions which had been referred to were exempted, the others should be too; but the whole of the exemptions ought to be done away with.

The CHAIRMAN said there might be something which it was desirable to go to the Legislature for,—the legal position of the Institutions with respect to their property, for instance; but if they went and asked for something the policy of which was doubtful, he thought the case might be prejudiced.

Mr. TRAICE (Leeds) said they were very well contented with the Act as it stood; they could take care of their property very well, if they were exempted from the rates. He had always felt that there was a manifest injustice in anything which took away from the operation of universal law; but in reference to what had been said about going to the Chancellor of the Exchequer, he might be allowed to observe, that the exemption had nothing to do with the Chancellor of the Exchequer,—it merely related to the local rates; and though that was not the best mode of contributing, it was no more than right that the public should contribute somewhat towards the support of the Institution in their neighbourhood.

The Rev. W. TAYLOR JONES (Romford) said, in many instances Institutions had been exempted by going through the regular routine at the Quarter Sessions, and afterwards some individual feeling himself aggrieved, had raised the legal question, and they had been obliged to pay not only the present, but, in some cases, the back rates. He had been told by the Recorder, after a trial of this kind, that the keeping newspapers to read took away from the strictly literary and scientific character of the Institutions, and unfitted them for the exemption.

Dr. HUDSON (Manchester) said although he agreed with Mr. Chester, that the Institutions should not have exemption, still as the representative of a large body he was bound to express their opinion, which was that some steps should be taken for a legal examination into the subject; and he believed the only way this could be done would be by a Parliamentary Committee.

The CHAIRMAN said that it was quite clear that it did not matter what resolutions they passed upon the subject, the House of Commons would no doubt take its own steps. The only question was, whether they should pass those resolutions which would be likely to lead to the object they had in view. He did not know whether as an individual he might say that it was quite certain they would have a Parliamentary Committee; and they might as well perhaps get all the advantage they could by asking for that which was coming on, rather than

going at once to the exact proposition. However, that was for the meeting to consider.

Mr. HOLE (Leeds) agreed that the whole system of exemptions was wrong, because it was a difficult matter for even the longest-headed lawyers to decide which came under the exemption, and which did not; but knowing as he did that the Institutions were pinched for want of means, if it would be the means of assisting them, he would be very willing to give up the principle.

Mr. BRAMWELL (Mayor of Durham) suggested whether it was prudent to enter into the matter, as there were several Institutions that were really considered as exempt.

Mr. NOLDWRIGHT (Walworth), said their worthy friend, Mr. Chester, had asked, Why should Institutions seek to be exempt from taxation? It was because they had already paid a rate, and should not be called upon to pay a second. No doubt many present could remember the time when the exemption was first broached, he believed by Lord Brougham, about twelve years back: it was then proposed that it should extend to Government taxes; and the Bill also gave the Institutions, he thought, a standing in law, and secured them their property. For some reasons, which he could not recollect, that Bill was not introduced; but some six or seven years afterwards the present act was passed, which, as they had heard, was in many instances totally inoperative, and had always been open to cavils and objections. It seemed to him that they could go with better grace to ask for the repeal of that law, than the repeal of the stamp taxes and advertisement duty, which had already been recognised. He thought the experience of by far the greater number of Institutions, not only in London, but throughout the country, would show, that unless those who were now subject to taxation had some hope of immediate relief, the disruption and close of many of them would take place.

The following Resolution was then moved by Dr. HUDSON, of Manchester; seconded by Mr. JOSEPH ASHWORTH, of Pendleton; and carried:

"That it be remitted to the Council of the Society of Arts to endeavour, if deemed advisable, to obtain a Parliamentary inquiry into the legal position of Literary and Mechanics' Institutions, with reference to 6 and 7 Vic., cap. 36, and the other Acts recited in Appendix IV. of the Report presented to this meeting."

The CHAIRMAN said, the Conference had been sitting five hours and a half; 106 speeches had been made, and each had occupied on an average three minutes and a half. He thought that was a statistic worth recording.

Votes of thanks to the Chairman and the Council of the Society of Arts were then passed, and the proceedings terminated.

THE DINNER.

AFTER the Conference about 250 gentlemen, Members of the Society of Arts, Representatives of the Institutions in Union, and other friends of Education, sat down to dinner at the Freemason's Tavern, under the Presidency of the Right Hon. EARL GRANVILLE. Among the company were Lord Radstock, the Very Reverend the Dean of Hereford, the Rev. the Archdeacon of Hereford, Mr. W. Tooke, F.R.S.; Mr. Charles Knight; Mr. S. Holme, Mayor of Liverpool; Mr. Sopwith, F.R.S.; Mr. Ewart, M.P.; Mr. Hutt, M.P.; Dr. Lyon Playfair, C.B.; Mr. Warren De la Rue, F.R.S.; the Rev. Dr. Booth, F.R.S.; Mr. John Bell, Mr. Winkworth, Mr. Harry Chester, Capt. Owen, R.E.; Don Manuel de Ysasi, Mr. Robert Hunt, Mr. R. D. Grainger, F.R.S.; Mr. George Lowe, F.R.S., &c., &c.

The cloth having been removed, the CHAIRMAN proposed the health of "the Queen," which was most cordially responded to. The CHAIRMAN then gave the health of "His Royal Highness Prince Albert, President of the Society of Arts, Manufactures, and Commerce, and the rest of the Royal Family;"—in doing which he referred to a speech recently made by Prince Albert on a similar occasion to the present, when His Royal Highness expressed the hope that the education of the Royal children might be such as to fit them for the position they were destined to occupy, as well as to realize the fond and almost parental expectations of the British public.

The Very Rev. the DEAN of Hereford then proposed "Success to Instruction in Science and Art." He said he believed the success of education would very greatly depend on the instruction given in science and art. He did not wish the clergy to neglect the religious instruction of the people, but he thought they might often bring their instruction more to bear than they had done upon the realities and utilities of life. (Cheers.) He had done his best to establish self-supporting schools in his neighbourhood, and he had not laboured in vain. However some persons might consider it a delusion, he thought it one of the principles of social economy that education should be paid for by those who received it, and he was glad to find that principle being more and more recognised. (Hear, hear.) He believed the cause of education had greatly progressed of late years, and he attributed no small portion of that progress to the proceedings of the Committee of Council, especially in reference to the wholesome system of Inspection which it had instituted. The Inspectors, he thought, did not always pay so much attention to science and art in the different schools as they might do, but he trusted they would pay more attention to those points in future. Many persons were disappointed with the introduction of subjects of that kind into schools, expecting too great results in too short a time; forgetting that the progress of education must necessarily be slow. The Very Reverend the Dean then mentioned the case of a youth instructed in one of the schools under his care, who when employed in the Excise-office in London, attracted the attention of his superiors, and was then sent to the London University, where he carried away several prize medals, and had the prospect of gaining several others. He argued thence that a great deal of talent was lost to the country for want of early education. He concluded by proposing the toast, and coupling with it the name of Dr. Lyon Playfair. (Cheers.)

Dr. PLAYFAIR, in acknowledging the toast, said he thought there was an ample guarantee in the proceedings of the week that the text of the toast was likely to be realized. Formerly they had heard of meetings of mayors for the purpose of consulting how they might retain their corporate privileges against baronial aggression; but it was a novelty of modern times to find mayors meeting for the purpose of promoting art and science. In 1850 there was an assemblage of mayors in the Mansion-house for the purpose of promoting the Great Exhibition; and in the present year, as a fitting sequel, they had met to consider how they might best raise the condition of the industrial population. The meeting held that day was, he thought, a remarkable one, from the unanimity with which it had pronounced on the absolute necessity for infusing science into elementary education. And it was a further matter of congratulation that the noble Lord in the chair, who was President

of the Committee of Council on Education, took such enlarged views with respect to science and art. (Cheers.)

The CHAIRMAN proposed, "The Literary and Scientific Societies, and Mechanics' Institutions, of the United Kingdom; and prosperity to the Union;" coupled with the health of Mr. Chester. He found that these important bodies now exceeded 850 in number, of which 270, comprising about 84,000 members, were in union with the Society of Arts. He said he had been struck by a comparison of the sentiments entertained in the present day, on the subject of education, with those formerly expressed in the House of Commons, where, on one particular occasion, a proposition for some measure of education by the people was rejected by an enormous majority. The only arguments advanced were, that as we did not make all men tailors, or all shoemakers, it would be absurd to teach all men to read and write; and that education generally tended to increase rather than diminish poverty. (Laughter.) The opinion of the present day was the reverse of that. (Hear, hear.) It was no longer believed that a man would make a coat or a shoe, or dig a furrow in a less workmanlike style because he happened to know how to read and write; or that he would be much inferior if he knew the quality of the cloth, or the peculiarity of the leather, or the chemical analysis of the soil upon which he had to labour. (Cheers.) The progress of education in this country was to be seen in the increase of elementary schools, and in the higher kind of instruction imparted in them; in the improved character of the press; in the description of books sold at railway stations, and other public localities; and in many other equally indubitable marks of progress. Reference had been made to the desirableness of introducing into elementary schools under Government inspection, some increase of instruction in Scientific and Artistic subjects. That was a feeling in which the Government entirely participated; and no exertion should be wanting on his (the Chairman's) part to endeavour to carry it out. They anticipated no difficulty in the matter, but rather cordial co-operation on the part of the schoolmasters generally. (Hear, hear.)

Mr. CHESTER, in acknowledging the toast, said he had great reason to hope that the condition of Mechanics' Institutions was one of increasing prosperity; and he attributed the improvement to some extent to the Union established by the Society of Arts, but still more to the great progress which public opinion had made in the matter of education. There appeared at one time to be an apprehension among some of the Institutions who were invited to join the Union, that the Society of Arts was going to take the government out of their own hands, and transfer it to John-street, Adelphi; but he hoped that apprehension was now entirely dispelled; for the principal part of the business would not be transacted by the Society in London, but would be left to the country Societies, who would communicate the results of their experience to the Council, by whom those results would be turned to the advantage of all the Institutions in the Union. He thought the Society of Arts would greatly benefit from the Union. It had required some medium of communication with the country; and this was now, of course, facilitated by having entered into connection with such large and intelligent bodies as were scattered throughout the country in the form of Mechanics' Institutes. Thus, he conceived the advantages to be mutual, and he trusted they would be increasingly so. (Cheers.)

Mr. HUTT, M.P., proposed, "Prosperity to the Society of Arts," coupled with the health of Mr. Winkworth.

No one, he said, could have witnessed the efforts of the Society in the cause of education during the past year, without wishing God-speed to such an Institution. (Hear, hear.) The dissemination of a knowledge of science and art amongst a people devoted to productive industry, must always be a matter of deep interest in a commercial point of view; for the manufactures of a country would have their value in the markets of the world according as they were distinguished by correctness in execution and by artistic talent. But the Society had claims upon the public attention in a moral point of view. In a country so devoted to the accumulation of money, it was of the highest importance that people should have other aims and other pleasures of a less selfish and more refined nature, to enable them to gratify the higher instincts of their being; and whatever tended to lead away from pursuits of a material character to the quiet pleasures of intellectual gratification, was a real and substantial gift to every human being who received it. (Hear, hear.)

Mr. WINKWORTH, in replying to the toast, said, the Society of Arts was now in its hundredth year; yet, paradoxical as it might seem, though it was so aged it was younger than ever. (Cheers and laughter.) It had availed itself of all the appliances furnished by invention and discovery; and the results of its labours were patent to the world. To its labours were in a great measure due the Exhibition of 1851, as well as others which had followed in its train. It had a variety of objects to carry out, and he had no doubt that success would continue to crown its efforts if it continued in the same course that it had latterly followed, which had already been the means of very largely increasing the number of its members.

Mr. CHARLES KNIGHT, who was received with long and loud continued cheering, proposed, "The health of the Representatives of the Institutions in Union with the Society of Arts." He said he associated the present elevated and prosperous condition of the people, politically and otherwise, with the progress of education. As people advanced in the knowledge of science and art, they could not but advance in their social condition. This could not be calculated by statistics, it could not be tested by figures, but by every man's experience; and he would appeal to all present whether their humbler neighbours in their various localities were not greatly advanced, mentally, socially, and morally, and altogether improved in the ordinary courtesies of life. Eighty or ninety years ago Goldsmith wrote in his "Traveller" these lines, as an eulogium upon Englishmen:

"Pride in their port, defiance in their eye,
I see the lords of human kind pass by."

Would that be considered complimentary to any class of Englishmen in the present day? Who now went about with pride in his port, and defiance in his eye, asserting his supremacy over all around him? Further:

"Fierce in their native hardihood of soul,
True to imagine right beyond control."

What Englishmen were fierce now? They had the "native hardihood of soul," that made them win Percy, and Agincourt, and Waterloo; but they were not fierce: it was the characteristic of true courage to be gentle. They were certainly "true to imagine right;" yes, and they now had true liberty; while 100 years ago they had but the shadow,—they did not cherish that loyalty that was love, or that liberty which was respect for law. (Hear, hear.) This great change in the people was doubtless owing to the progress of education, and in that work the Society of Arts had

taken an honourable and a useful part, which entitled it to the gratitude of all men. Mr. Knight concluded by proposing the toast, coupling with it the name of Mr. Ewart, M.P., on whom he passed a warm eulogium for his disinterested efforts in bringing about a Parliamentary recognition of the importance of free libraries for the people.

Mr. EWART, M.P., acknowledged the toast, and expressed his sense of the importance of the Union of Mechanics' Institutes in connection with the Society of Arts. There was, he said, at first, a not unnatural jealousy that the Society would realize Pope's line, and

"Be like Aaron's rod, and swallow up the rest;"

but the Union was now shown to combine the greatest freedom of action with the vast advantages which must always flow from a central system of operation (Cheers).

The CHAIRMAN proposed the health of "Mr. Hole, the Secretary to the Yorkshire Union of Mechanics' Institutes."

Mr. HOLE briefly acknowledged the toast, dwelling on the advantages of the Union for affording the benefits of centralization, whilst at the same time local action was preserved.

Mr. R. A., SLANEY, in proposing the health of Lord Granville, the Chairman, remarked that it had been his lot for many years to look at the condition of the working classes, and he was convinced that the welfare and progress of this great country depended entirely on the progress of education among the vast masses of the people. He referred with pleasure to the recent improvements in the dwellings of the working classes, and desired to see education advancing in a similar ratio. He had now the pleasure of proposing the health of one who had for a long period been an advocate of education in this country, and had done much for it—of one whose public life and private virtues alike entitled him to their regard. He begged to propose the health of their noble Chairman, Lord Granville.

The toast was drunk with all the honours.

The CHAIRMAN, in responding, referred to the recent efforts in the cause of education made by the Lord Mayor of the City of London, who thought that the order, peace, and good conduct of a people could be better promoted by the advance of education than by the most carefully arranged police regulations. In proposing the health of the Municipal Representatives, he had great pleasure, in the absence of the Lord Mayor of London, in coupling the toast with the name of the Mayor of Liverpool.

Mr. S. HOLME (Mayor of Liverpool) said it was only a few minutes since he came into the room, and he was therefore not prepared, to do justice to such a toast. He felt happy, however, in having an opportunity of responding on behalf of his friend Alderman Challis, Lord Mayor of London, and especially on an occasion like this, connected with a Society aiming at such noble purposes. He understood they aimed at industrial education; and this was an industrial country, depending for its greatness on the energy of its industry and its commercial enterprise. But as he walked through the streets, he still had to look upon masses of ignorance which he wished to see removed; and if he had any influence in his public capacity, he felt it would be his duty no less than his privilege to aid in removing it. The mechanics of this country had a claim upon their attention. He would ask, as a mechanic, who were the men who had carried out the real reforms of the present day, whilst the Legislature had only been talking about reform? He meant those reforms which really moved society, and he thought it would be at once admitted that it was the skill and

enterprise of such men as Watt, Stephenson, the elder Reunnie, and others, that had effected the great revolutions which enabled him to transact his business in Liverpool during the day, and rest comfortably in London at night. When he looked at the railways, the electric telegraph, and the harbours of the country, he felt that the working classes had a claim on their attention, and it was because this Society were working in this direction that he wished them God-speed. He wished to see the country progress; and he hoped as Liverpool surpassed London in the tonnage of its shipping, it would also surpass it in mechanical and industrial education. He said this merely in the spirit of generous rivalry, in order to incite London to endeavour to excel in this particular as in others. As they were now brought together as one great family, let them exercise the powers which science had given them for the purpose of benefiting the physical condition of mankind. And they must remember that the mechanics of the present day were not the mechanics of half a century ago; they were advancing, and if the classes above them did not move on, they would be compelled to do so. Talk of stopping education,—why they might as well talk of stopping the Atlantic wave. Government might legislate or not, men would burn for intelligence,—and intelligence they would have, whether those whose duty it was to give it them did so or not. If the higher classes acknowledged the responsibility of their position, if they believed they had duties as well as rights, it was their duty and their right to see that this burning desire should have a right direction given to it, by affording that education, physical and moral, which the people of this country required; such an education as would bind them to the monarchical institutions of the country,—those institutions which would give them civil and religious liberty in the truest sense; institutions headed by a monarch who was worthy to be loved by her people. The higher classes must move if they would preserve their influence: society was a great crowd, and if those did not move on who were at the head, he should be sorry to say they would be trodden under foot,—but they would be regarded as deserters; and as this was the first time he had had an opportunity of speaking in this metropolis, which was looked to as an example of all that was good, he urged on them to set an example worthy of imitation in this matter, and in giving that education to the people for which they panted. He begged to thank them on behalf of the Lord Mayor, and of the various municipalities, for the honour they had done them in drinking their healths.

After a few further observations from the CHAIRMAN, the meeting separated.

PATENTS FOR INVENTIONS.

THE following important Bill, relating to Letters Patent for Inventions, has just passed through the House of Lords, and was presented to the House of Commons on the 23rd ult. The Bill is intitled:—"An Act to repeal certain Provisions of the Patent Law Amendment Act, 1852, in respect of the Transmission of certified Copies of Letters Patent and Specifications to certain Offices in Edinburgh and Dublin, and to make provision for the printing, publishing, and Sale of Specifications."

Whereas, it is expedient to repeal certain Provisions of the Patent Law Amendment Act, 1852, in respect of the Transmission of certified Copies of Letters Patent and Specifications to certain Offices in Edinburgh and Dublin, and to make provision for the printing, publish-

ing, and Sale of Specifications: Be it therefore enacted by the Queen's most Excellent Majesty, by and with the Advice and Consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the Authority of the same, as follows:

I. Sections Twenty-nine, Thirty, and Thirty-three of the said Act, and the Proviso in Section Eighteen of the said Act directing Transcripts of Letters Patent to be transmitted to the Director of Chancery in Scotland, and such Part of Section Twenty-eight of the said Act as directs that in case Reference is made to Drawings in any Specification deposited or filed under the said Act an extra Copy of such Drawings should be left with such Specification, and such Part of Section Thirty-five of the said Act as directs that certified Duplicates of all Entries made in the Register of Proprietors of Letters Patent should forthwith be transmitted to the Office of the Commissioners in Edinburgh and Dublin, shall be repealed.

II. The Commissioners shall cause true Copies of all Specifications, with the Drawings accompanying the same, if any, and of all Disclaimers and Memoranda of Alterations filed under or in pursuance of the said Patent Law Amendment Act, 1852, to be open to the Inspection of the Public at the Office of the Commissioners at all reasonable Times, subject to such Regulations as the Commissioners may direct; and shall also cause all Provisional Specifications left at the Office of the Commissioners to be in like Manner open to the Inspection of the Public, at such Times, after the Date of the Record thereof respectively, as the Commissioners shall by their Order from Time to Time direct.

III. The Commissioners shall cause to be printed, published, and sold, by the Printer to Her Majesty, at such Prices and in such Manner as they shall think fit, all Specifications and Complete Specifications, with the Drawings accompanying the same, if any, and all Disclaimers and Memoranda of Alterations deposited or filed, or hereafter to be deposited or filed, under the said Patent Law Amendment Act, or enrolled in the Rolls Chapel Office, Petty Bag Office, or Enrolment Office of the Court of Chancery, and by the said Act directed to be transferred to the Office of the Court of Chancery appointed for the filing of Specifications; and all such Specifications, Complete Specifications, Disclaimers and Memoranda of Alterations shall be so printed and published as soon as conveniently may be after the filing or transferring thereof respectively; and the Commissioners shall also cause Copies of all such Specifications and Complete Specifications, with the Drawings accompanying the same, if any, and all Disclaimers and Memoranda of Alterations so printed by the Printer to Her Majesty, forthwith to be transmitted to the Office of the Director of Chancery in Edinburgh and the Enrolment Office of the Court of Chancery in Dublin respectively, there to be open to the Inspection of the Public at all reasonable Times, subject to such Regulations as the Commissioners may direct.

IV. A True Copy, under the Hand of the Patentee or Applicant, or Agent of the Patentee or Applicant, of every Specification and of every Complete Specification, with the Drawings accompanying the same, if any, shall be left at the Office of the Commissioners on filing such Specification or Complete Specification.

V. Certified Copies or Extracts, sealed with the Seal of the Commissioners, of Letters Patent, Specifications, Disclaimers, Memoranda of Alterations, and all other Documents recorded and filed in the Commissioners Office, or in the said Office of the Court of Chancery, shall be received in Evidence in all Proceedings relating

to Letters Patent for Inventions in all Courts whatsoever within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, and Her Majesty's Colonies and Plantations abroad, without further Proof or Production of the Originals.

VI. This Act and the Patent Law Amendment Act, 1852, shall be construed together as One Act.

WORKING-MEN'S READING ROOMS IN CARLISLE.

IN the *Household Words* for September, 1851, there appeared an article on this subject, which attracted so much attention at the time, and has been the means of calling several analogous Institutions into existence, that it is proposed to draw from that source a few of the principal facts there given. The Institution referred to has since made much progress.

"In April, 1848, when every ear was daily listening for the great tidings which that period of strange excitement was continually furnishing—in April, 1848, a few poor men, most of them handloom weavers, clubbed their wits together for the means of getting at a daily newspaper. Obviously it was found requisite that they should also club their pennies. The result was, that within the first week after the suggestion had been made, fifty persons had come forward as subscribers of a weekly penny, and a school-room had been lent to them wherein to meet and read their papers. These men were all of the same class; they had originated their idea, and they were themselves managing its execution. Companions multiplied about them; there was formed quite a prosperous little society of men contributing their weekly pennies, and it was resolved, therefore, to attempt the formation of a permanent reading-room, and a committee was appointed to draw up a code of rules. The working-man's reading-room in John-street, Botcher-gate, became thus one of the Institutions of Carlisle, and flourished for a few months; then news became less interesting, trade also was bad, members fell off, funds declined, and the experiment would have been abandoned, but for the judicious and well-timed assistance of Dr. Elliot, and other members of the middle classes. These aided the effort of the working-men to help themselves, with advice, and cash, and books; their aid was fairly given, fairly taken, no abandonment of independence on the part of the workmen being asked or offered.

"They began, as we said, in April, 1848, a few handloom weavers, paying a few pennies. In July, 1851, they had 112 members, for whom there were taken in 2 daily papers and 13 weekly papers, besides 15 periodicals; for whose use 718 volumes were arranged on shelves, which had furnished to the members, during the preceding year, 3,000 readings at their own fireside.

"Over this Reading-room and Library, it is a fundamental rule that no man shall exert an influence by holding office or by voting, unless he be a man dependent upon weekly wages for support.

"It is also a rule that any member capable of getting and of doing work, shall be expelled if he leave his contribution for a month unpaid; but in the manly spirit which has guided the whole management of this Society, it is made also a fundamental law, that any member who is out of work, through real inability to get it or to do it, shall be entitled to continue in the enjoyment of the privileges of the Institution, without payment and without responsibility.

"Finally, to save the property of the Society from all risk of dispersion, it is vested in the Corporation of Carlisle."

HOME CORRESPONDENCE.

CHRONOMETERS.

SIR,—In accordance with the understanding that I should give my reply in the Journal, concerning the chronometer trials, I send the following for publication.

Mr. Denison observes, that if we take the average weekly rate of each chronometer for the first eight weeks, as shown in the page exhibiting the order of temperature, we shall have a very good indication of its going in the extreme cold; and in like manner the average rate for the eight middle weeks will show the effect of the compensation for mean temperature; whilst the average of the last eight weeks will show the effect of the compensation for extreme heat;—eliminated as far as possible by taking the average of a tolerably long period of temperature of one kind.

Now if this rule simply increased the length of trial in each temperature, it would be a very good one for arriving at the effect of the secondary compensation. On examination, however, it will be found to do a great deal more.

Let us try it by example on the chronometer rates of last year; for which purpose I extract the following temperatures in each of the twenty-five weeks, during the trial of chronometers at the Royal Observatory in 1852, from the Government list, at pages 4 and 5, and arrange them in the divisions proposed by Mr. Denison.

Temperatures in the first 8 weeks.	Temperatures in the second 8 weeks.	Temperatures in the third division of 9 weeks.
21°	46°	54°
49	56	60
30	42	57
46	52	66
28	47	60
49	56	63
30	45	61
48	60	68
32	49	80
52	61	106
34	52	80
52	61	115
35	56	82
56	63	109
47	56	76
60	63	106
		84
16)669(42	16)865(54	106
64	80	
		18)1439(80
29	65	1440
32	64	

On looking over this example we find the following :

1. That the column which should represent the extreme cold varies in temperature from 21° to 60°; that the second column varies from 42° to 63°; whilst the third column varies from 54° to 115°. None of the three periods, therefore, consist exclusively either of extreme cold, middle temperature, or of extreme heat; but each period contains a variety of temperatures intermingled together. Now the chronometer might gain in one temperature and lose in another; but if the two were mixed together, it would make it appear that it

had neither gained nor lost, and it would consequently not be possible to ascertain the error in the individual temperatures unless they were kept distinct from each other.

2. That if each column of temperatures be added together, and divided for the mean, we find the extremes are not 21° and 115°, as set down in Mr. Denison's Table printed in No. 27 of the Journal, but 42° and 80°; in fact, little more than middle temperatures compared with the others.

3. That we have only three temperatures to judge of, when in reality the secondary compensation is not merely required for three points on the thermometer, but for every temperature throughout the range; and to show the fallacy of the rule in this particular, I need only observe that had it been carried a step further, and the three temperatures reduced to one, it would have proved that no compensation was necessary for change of temperature at all.

4. That even the three divisions into which the rule reduces the temperatures, are not extreme cold, middle temperature, and extreme heat, but 42°, 54°, and 80°,—temperatures at which the effect of the secondary compensation would scarcely be appreciable; for I need not remind practical men that when the ordinary balance, unassisted by supplemental compensation, is adjusted at 42° and 80°, the error at 54°, from its being only 12° above the lower temperature, will be very small.

However favourable, therefore, this method of analyzing the rates may be to the kind of supplemental compensation which can only be adjusted for certain temperatures at the expense of producing sudden irregularity in others, it is unfitted for arriving at the chronometer's performance in every gradation of temperature; and therefore useless for determining the relative merits of the different modes of secondary compensation.

Yet it is upon this foundation that Mr. Denison has ventured to pronounce the Observatory rule all wrong for this purpose, and that my chronometers, instead of being first four years out of five, have been beaten every year. Now had the Observatory rule not been correct, it is the rule by which the competitors knew the merits of their chronometers would be determined; and therefore it would be unfair for any one to come forward after the trials were over, and say, It is true your chronometers have beaten the others according to the original conditions, but here is a rule that will reverse the order of things; and to adopt this course on such a rule as that employed by Mr. Denison will probably appear strange to the Members of the Society of Arts.

Having noticed Mr. Denison's rule, I will now describe the method by which the merits of the chronometers have been determined at the Observatory for many years past. This method consists in ascertaining from the weekly sums of daily rates in the order of time—not in the order of temperature, as Mr. Denison has it—first, the difference between the greatest and least weekly rate during the whole trial; and secondly, the greatest difference between one week's rate and the next. These errors are given in two columns on the last page of the rates; and the chronometers are arranged in the order of merit by multiplying the number of seconds in the column headed "greatest difference between one week and the next" by 2, and adding the product to the seconds contained in the other column, which gives the trial number. It was by this rule that the Table given in the abstract of my paper (*vide* No. 27 of the Journal) and the one now added were arranged.

ERRORS OF DENT'S CHRONOMETERS IN THE OBSERVATORY TRIALS FROM 1848 TO 1852.

Year.	No. of Chron.	Position in order of Merit.	Difference between the greatest and least.	Greatest diff. between one week and the next.	Trial No.
1848	2035	8th	s. 21.4	s. 6.1	33.6
	2100	22nd	29.7	8.0	45.7
1849	2100	13th	33.2	20.1	73.4
1850	2173	3rd	13.2	9.2	31.7
1851	2255	9th	26.7	17.9	62.5
1852	2240	3rd	15.9	12.0	39.9
			6) 140.1	6) 73.3	6) 286.8
Average of the whole ...			23.3	12.2	47.8

ERRORS OF LOSEBY'S CHRONOMETERS IN THE SAME TRIALS.

Year.	No. of Chron.	Position in order of Merit.	Difference between the greatest and least.	Greatest diff. between one week and the next.	Trial No.
1848	115	1st	s. 8.7	s. 4.6	17.9
	118	3rd	13.3	6.6	26.5
1849	124	3rd	17.3	9.2	35.7
1850	123	1st	12.7	4.7	22.1
1851	127	1st	16.5	4.4	25.3
1852	125	1st	11.7	9.4	30.5
			6) 80.2	6) 38.9	6) 158.0
Average of the whole ...			13.3	6.5	26.3

From this Table it will be seen that in the average of five years, the error of Mr. Dent's chronometers is nearly double the error of mine; that in the most favourable instance it is one-third more; whilst in one trial, that of 1851, the error is nearly three times greater.

Now, had one construction of vessel beaten another five years in succession in the average proportion of one half the entire distance sailed over, there would not have remained much doubt of the great superiority of one construction over the other.

Mr. Denison affirms, that this excellence has simply been owing to the care I have personally bestowed on the chronometers, and not to an improvement in the compensation. Now it is true that I have attended personally to the adjustment of my chronometers all along; but this is no more than what every competent person probably attends to in the chronometers sent for trial to the Observatory. To suppose, therefore, that one maker should be able to produce chronometers which should singly beat from twenty to fifty others four years out of five, simply by the care he bestowed, would be to impute a degree of carelessness to the other makers, which Mr. Denison, if he were a practical man, and had to contend with them, would find there was very little ground for; yet he goes on to support this position by bringing forward the performance of a chronometer of the ordinary construction adjusted by Mr. Dent, and tried in 1829.

Now, I have a better knowledge of what chronometers do at the present day than of what they did three-and-twenty years ago, and will therefore compare the rate given of this chronometer with the rate of Mr. Dent's patent construction in the trials at the Observatory during the last five years. Referring then to the Table already given, we find the average error of his patent chronometer to be 12.2 seconds between one week and the next; and supposing the statement concerning the other chronometer only varying 0.54 seconds in twelve months to be correct, it would appear that the patent construction,

aided by twenty years' additional experience, varies twenty-two times more in a week than the ordinary construction did in a year.

If the instance adduced by Mr. Denison does not therefore prove what he intended it should, it at least shows something else.

Hitherto I have spoken only of the ordinary chronometer trials; but there have been other trials of my improvement, conducted by the Astronomer Royal, at the request of the Board of Admiralty, of a more important character as regards the secondary compensation. These were special trials instituted in 1845, and 1846, particularly to test the principle; and in order that the trials should be more severe than any to which chronometers had before been exposed at the Observatory, I voluntarily proposed that the chronometers should be immersed in freezing mixtures, in order to test the principle in much lower temperatures than occur naturally in this climate. Before this proposition could be carried out, one or two difficulties had to be overcome: in the first place, the Observatory was not furnished with the necessary apparatus; and in the second, the Astronomer Royal was unwilling to incur the risk of damage that might occur to the chronometers from the employment of freezing mixtures. Not wishing, however, to give up the most severe part of the trial, I forwarded suitable apparatus to the Observatory, and undertook the risk of injury to my chronometers from its use; and also to repair such damage as might occur to any other chronometers that should be submitted to the same test for the purpose of comparison. I also sent an apparatus for exposing the chronometers to artificial heat, in which high temperatures could be more steadily maintained than in the iron tray then employed at the Observatory.

The results of these trials were given by the Astronomer Royal, in two Reports to the Board of Admiralty; and as they may be found in a Parliamentary return, obtained by Sir George Pechell, in 1849, I need only insert the following extract from the first Report, with the mean of the temperatures to which the chronometers were exposed, from the second Report:

"Mr. Loseby attaches to the balances of his chronometers curved tubes containing mercury.

"It is evident that the mercury, in expanding with an increasing temperature, arrives in parts of the tubes inclined in different degrees to the radii of the balance, and therefore its successive expansions produce successive effects of different magnitude on the momentum of the inertia of the balance. And by giving different forms to the tubes containing the mercury, the law of the successive alterations of the momentum of inertia may be made to adapt itself to the law of alteration of the elasticity of the spring, whatever that law may be.

"I consider this contrivance (taking advantage very happily of the two distinguishing properties of mercury, its fluidity, and its great thermal expansion,) as the most ingenious that I have seen, and the most perfectly adaptable to the wants of chronometers. I am not aware that it is liable to any special inconvenience."

Mean of the temperatures employed in the special trials of Loseby's secondary compensation at the Royal Observatory:

Fah.	13°	19°	52°	63°	79°	97°
	14	38	54	71	86	106
	18	49	59	78	97	112

I have before observed that these trials, from their being instituted with the direct object of testing the principle, were of the greatest importance as regarded the secondary compensation; yet Mr. Denison omitted

to notice them altogether: an omission not the less unjust from the fact of their being the only trials of a similar character which have taken place at the Observatory, much less that any other kind of secondary compensation has succeeded in them.

I may observe in conclusion, that Mr. Denison told us, the other evening, my method of secondary compensation was not the best, and referred us to his Exhibition Report; but on looking there I find he states that it is the best. If therefore he were recognised as any authority on horology, I might ask which opinion it was that he wished the public to believe?

Yours, &c.,

E. T. LOSEBY.

GLASS BALANCE SPRINGS.

Effra Vale Lodge, Brixton, June 2nd, 1853.

SIR,—I beg leave to make a few remarks with reference to my paper, "On the Construction and Application of Glass Balance Springs," read before the Society of Arts on Monday, the 30th of May last. In the discussion of this paper, and at the first onset, and before a single observation had been made relating to any properties existing in glass, which would render it unsuitable for balance-springs, it was peremptorily denounced as *one of the puffs of the trade*. As this remark cannot possibly apply to the Society of Arts, I must refute it on my own behalf. The subject of my communication was not got up for the occasion, but was the mere sum of recorded experiments and observations, made by myself upwards of four years back, for my own private satisfaction only, and which would in all probability never have passed the precincts of my work-room, if I had not lately seen the notice of the Society of Arts, inviting communications on the subject, and up to the time my paper was read, I had not the slightest personal acquaintance with any chronometer maker.

As regards the objections, one of the first was, that glass was liable to effloresce, or to decompose by the action of the atmosphere, but this was too well refuted at the time to need any further notice. The rest related principally to the practical difficulties of applying so brittle a material as glass. Of this perhaps no one can be more fully aware than myself, and the plans I have proposed may to some extent remove them, and I think that when a glass-spring is securely fixed, and proved at a strain three or four times greater than it will ever endure when in action, its position is such that it will be found almost impossible to fracture it, by any external violence short of that which would destroy the timepiece. These points could be decided almost by a single trial.

With reference to any property existing in the nature of the material itself, which would disqualify it for a balance-spring, scarcely anything was said. One of the objections was that the elasticity of glass increased with increase of temperature. If this is the case, it is a property that I have not yet discovered. How exceedingly valuable such would be, in a material or metal formed into a spring, as it would contain in itself the chief element required for perfect self-compensation!

But in assuming the value of glass as a balance-spring, I will throw compensation altogether out of the question, as it may give rise to quibbles on a subject upon which no two will perhaps exactly agree, and merely consider it as applied to a common pocket watch.

Suppose we place a number of springs of various materials together under the same conditions of force,

and expose them all at once to an equal temperature; would not any watchmaker of sense select that which was least affected by heat both in elasticity and length?—in these properties glass stands first in the scale. Have not watchmakers applied balance-springs of steel, either quite hard, or tempered to a straw-colour, only because it approximates more nearly towards the properties of glass? It certainly possesses a large share of the brittleness of the latter, with but a small portion of its advantages. Its expansion by heat is scarcely lessened, and it is still capable of being permanently deflected at a low temperature. I have known steel balance-springs hardened and tempered to a straw-colour, fracture spontaneously after a few years' use. On examining the broken ends with a microscope, it was evident that a molecular change had taken place in the substance of the steel. Can this ever happen with glass?—I should say decidedly not.

We may wind up a torsion balance upwards of a score of turns, and the index will return to exactly its first position, in spite of every change of temperature short of 212°. This would not be the case with steel, and I think that no one would be so absurd, as to propose the substitution of a steel wire in place of the glass thread by which the index of the balance is suspended. It was stated that glass had been tried as a chronometer-spring by several, and found not to answer. If the same kind of compensation has been applied to it as that required for steel, I should expect a failure to be the result.

If a maker puts in hand say ten chronometers of the same size, and strength of maintaining power, and as nearly alike as human skill can make them, after the first correction, perhaps only one of these will come up to the desired standard, others will be more or less troublesome, and three or four out of the number will baffle all attempts to set them right for weeks and months. Such being the case, is one or even ten different trials, of a strange material, sufficient to prove its failure? My own belief is, that glass balance-springs have never had a sufficient trial, even in the hands of Mr. Dent himself.

I have not yet heard one single sound objection raised against the advantages that theory has shown glass to possess, sufficient to deter me from further experiments, and in conclusion I must state, that I do not make these remarks for the sake of exciting a controversy, for if any one will come forward and prove that there is any theoretical defect in this material, which will render it rotten in its very foundation when applied as a balance-spring, I shall be the first to verify it, and so far as I am concerned, end all further dispute on the subject. A subject like this ought to be discussed, without the influence of petty trade feelings of prejudice or self-interest. It is simply a scientific question, that the Society of Arts have brought before the world, and as regards anything that watch and chronometer makers have said concerning it, it still remains unanswered.

I remain, Sir,

Your obedient Servant,

F. H. WENHAM.

PROCEEDINGS OF INSTITUTIONS.

BRISTOL.—The Eighth Annual Report of the Directors of the Athenæum, which was presented at the Annual General Meeting, held on the 27th of April last,

states, that the number of subscribers and amount of subscriptions are not so large as in the two previous years, which is attributed to the omission of lectures, owing to the present apartments not affording sufficient accommodation for that purpose. The number of subscribers for the past year was 836, and amount of subscriptions, 459*l.* 1*s.* 6*d.*, as compared with 967, paying 547*l.* 11*s.* 0*d.*, in the previous year. The Directors express the hope, that when the new premises in Cornstreet are occupied, the prosperity of the Athenæum will be considerably increased.

GLASGOW.—The Thirtieth Annual Report of the Mechanics' Institution states, that there has been a falling-off in the attendance on some of the most popular classes, due, the Committee of Management believe, to a disposition on the part of the public generally, to give the preference to Lectures and Exhibitions which contribute to their general amusement over those more solid and practically useful studies which it is the province of the Mechanics' Institution to elucidate and teach. The following is an analysis of the attendance at the classes, with the names of the Lecturers:

Chemistry	Dr. PENNY	140
Natural Philosophy . . .	PROFESSOR SCOTT . .	96
Anatomy and Physiology .	Dr. ALEX. LINDSAY .	31
Mathematics	PROFESSOR SCOTT . .	65
Mechanical Drawing . . .	Mr. ROBT. HARVEY .	81
Botany	Mr. R. KENNEDY . .	50

Acting on a suggestion of the Society of Arts, that a systematic interchange among Mechanics' Institutes, of specimens illustrating the manufactures of each particular district, would materially enhance the value of such Institutions, the Committee has resolved to form a collection of the productions of this neighbourhood, exhibiting the raw material and the various stages of manufacture, and also to exchange specimens of these for those of other districts; and for this purpose, have issued circulars to the proprietors of several of the most eminent manufactories in the vicinity, requesting their aid in furnishing such specimens. The library has received considerable additions; and during the last six months 4,938 volumes have been issued, being about eighteen volumes to each reader. The following analysis shows the occupations of the students reading in the Library: architects and civil engineers, 12; baker, 1; bookbinder, 1; cabinetmakers, 4; calico-printer, 1; chemists, 12; clerks, 61; clothlappers, 5; confectioner, 1; cooper, 1; cotton spinner, 1; designers, 9; dyers, 4; editor, 1; jewellers, 3; joiner, 1; letter-press printers, 3; manufacturers, 3; masons, 2; masters and managers, 11; merchants, 7; mechanics, mill-wrights and engineers, 33; optician, 1; painters, 2; plumbers, 3; reedmaker, 1; shoemaker, 1; smiths, 5; slaters, 2; starch manufacturer, 1; students, 8; sugar refiners, 2; tailors, 2; teachers, 3; upholsterers, 2; warehousemen, 49; no profession given, 18.

HACKNEY.—The Literary and Scientific Institution has just completed its Spring Course of Lectures, which embraced two by Mr. George Grosmith: one on "English Notions of American Character," the other on the "Ludicrous in Life;" one by Mr. F. Chatterton, on "The Harp;" two by Mr. George Thompson, on "British India;" one by Mr. Thomas Price, on "Alfred the Great;" one by Mr. C. F. Partington, on the "Eye and Ear;" two by Dr. Bachhoffner, on the "Atmosphere," and on "Voltaic Electricity;" two by Mr. George Dawson, on "Old Books;" two by Mrs. Balfour, on "Home Influence," and on the "Life of Cowper;" with musical entertainments, by the Messrs. Distin, Mr. Henry

Phillips, and others. The payments to the lecturer amounted to 95*l.* 0*s.* 6*d.*; the receipts from non-members, to 66*l.* 2*s.*; making the actual cost less than 30*l.* to the Institution, which numbers 588 members, besides 242 lady admissions to the lectures. This Institution is in a very satisfactory condition,—in a great degree owing to the advantage it enjoys, of having (through the liberality of J. R. D. Tyssen, Esq.) the use of a large and most convenient suite of rooms rent-free, so that it is enabled to offer all the attractions of the highest-class institutions for an annual subscription of 10*s.*

LEISTON.—A Lecture on "Popular Superstitions," was delivered to the Members of the Mechanics' Institution, on Monday evening, June 6th, by Mr. Simpson, of London, who was listened to with marked attention throughout. The manner in which the subject was treated gave great satisfaction, and the illustrations of the various kinds of "popular superstitions," were much approved. This Institution is now in the third year of its existence, and has progressed most favourably. It numbers 120 members, with a library of about 900 volumes. The members are composed principally of engineers and mechanics in the employment of Messrs. Richard Garrett and Sons, of Saxmundham, the senior partner in that firm being the President.

TO CORRESPONDENTS.

Notice.—Members, and others, who can furnish or obtain original information or suggestions on the subjects included in the Society's Premium-list, or other topics connected with the Society's various departments of operation, are invited to communicate the same to the Secretary, in as condensed a form as possible, for the purpose of being either read and discussed at the evening meetings, or inserted in the Society's weekly Journal. Anonymous letters cannot be attended to. All communications, whether the author's name is to appear or not, must be accompanied by the writer's name and address.

Members of the Society who do not receive the JOURNAL regularly, are requested to give immediate notice to the Secretary; and, in order to prevent mistakes, they are particularly requested to signify any change which they desire to have made in their address, with as little delay as possible.

Country Institutions.—Correspondents who are so good as to send reports of proceedings of Local Institutions, are requested to forward them immediately after the Meeting to which they refer, and not later than Tuesday morning, if intended for insertion in the following Friday's Journal.

Errata.—In page 329, line 7, for "from 2½*d.* to 1½*d.* per yard," read, "from 2*d.* to 1*d.* per yard."

MISCELLANEA.

METHOD OF TREATING FATTY OR OLEAGINOUS BODIES.—Mr. S. G. Archibald, has lately taken out a patent for "An improved mode of Extracting or Rendering Animal Fats and Oils." The invention is for the purpose of separating the fibrine or other extraneous matters therefrom, and obtaining a sound bright oil or tallow, according to the material operated upon. In carrying out this invention, the patentee provides one or more steam-tight tanks, and connects the same to any ordinary steam-boiler, which is provided for the purpose

of supplying them with steam at a high pressure. Into such a tank the material to be operated upon is placed; and, after being subjected to steam-heat for the requisite period, the fat or oil is drawn off, and the refuse matters are discharged from the tank, through a suitable opening provided for the purpose. When seal oil is required to be extracted or rendered, the fat is separated from the pelt of the seal in the ordinary manner, and placed in the tank through a man-hole, and the lid thereof is secured steam-tight. It is preferred to operate upon the animal matter while fresh, or before decomposition has commenced, or proceeded far; for, otherwise, the application of the steam-heat will bring out a colouring property, which exposure to the air has imparted to the fat; and thus a dark-coloured, instead of a bright pale oil, will be the result. When whale oil is to be rendered, the blubber is cut into small pieces, and placed in the tank. Steam is then admitted to the tank, and the pressure brought up to from 50 to 60 lbs. to the square inch. The heat to which this pressure is equivalent, will immediately act upon the cellular tissue or membrane of the material under operation,—causing the cells to burst, and the oil or fat to flow readily. The tissue, as well as all the animal fibre, will become dissolved; and, upon ebullition ceasing, the glutinous mass will, together with the condensed water, fall to the bottom of the tank.

MARYLEBONE FREE LIBRARY.—A public meeting of the inhabitants of the borough of Marylebone was held at Blagrove's Concert Rooms, Mortimer-street, Cavendish-square, on Monday week, for the purpose of promoting the establishment of a Free Library for the district. The chair was taken by Mr. Joseph Hume, M.P., who, in his opening speech, dwelt upon the advantages of a system of national education purely secular, and recommended free libraries as an agent for effecting it. His Excellency Mr. Ingersoll, the American Minister, moved the first resolution, to the effect that the establishment of free libraries is eminently calculated to elevate the social condition of the people; and in doing so recounted the great progress made by America in consequence of the general diffusion of education, wondering that the establishment of free libraries should have been so long delayed in this country, when he found Gibbon, at the period that he was writing his great work, complaining of their non-existence. Sir Benjamin Hall, M.P., seconded the motion, and complained of the money already subscribed (1,000*l.*) as insignificant when compared with the district. Mr. Ewart, M.P., supported the motion, and explained how his bill might be modified so as to enable parishes, as well as towns having municipal corporations, to erect free libraries, and to rate themselves for their support. The motion was then agreed to. Mr. Macgregor, M.P., moved a resolution pledging the meeting to establish such an institution in Marylebone. This having been seconded by Mr. Gregson, M.P., was unanimously agreed to. Mr. Benjamin Oliveira, M.P., and other gentlemen having addressed the meeting, the proceedings terminated with the usual vote of thanks to the chairman.

PARLIAMENTARY REPORTS.

Par. No. *Delivered on 2nd June, 1853.*
 534. Bills—Excise Duties on Spirits (amended.)
 542. „ —Income Tax (amended).
 543. „ —Whittlebury Forest (as amended by the Select Committee).
 Cape of Good Hope (Representative Assembly)—Further Papers.
 Cape of Good Hope (Kafir Tribes)—Correspondence.
 Census of Great Britain, 1851—Population Tables, Vol. II.

Delivered on 3rd June.
 431. Election Petitions—Return.
 505. East India—Accounts.
 515. Queen's Colleges (Ireland)—Returns.
 516. Glasgow Waterworks' Bill—Report of the Inspectors.
 522. Foreign Sugar—Account.
 547. Spirits (Ireland)—Return of number of gallons distilled, &c.
 548. Spirits (Ireland)—Return.
 518. Bills—Thames Embankment.
 519. „ —Pimlico Improvement.
 551. „ —Glanders Prevention (Ireland).
 Census of Great Britain, 1851—Population Tables, Index.

Delivered on 4th and 6th June.

509. Berwick-upon-Tweed Election—Minutes of Evidence.
 507. Pilotage—Return.
 111. Poor-law—Return.
 489. Cinque Ports' Pilots—Accounts.
 492. Public Income and Expenditure—Return.
 524. Bank of England—Accounts.
 525. Strangers and Divisions—Report from Committee.
 538. Highways (Melton Mowbray)—Account.
 563. Committee of Selection—Thirteenth Report.
 562. Bill—Belfast Municipal Boundaries.
 Prisons (Ireland)—Report of the Inspector.

PATENT LAW AMENDMENT ACT, 1852.

APPLICATIONS FOR PATENTS AND PROTECTION ALLOWED.

From Gazette, 3rd June, 1853.

Dated 27th April, 1853.

1011. J. Dinning—Wash-stands and baths.

Dated 2nd May.

1056. J. Greenwood—Fixing mordants.

Dated 4th May.

1086. C. A. Jaquin—Covered buttons, by dies and pressure.

Dated 6th May.

1121. C. Nickels—Machinery for masticating, &c., India-rubber, &c.
 1122. W. and J. Longmaid—Treatment of waste products in smelting.

Dated 7th May.

1188. J. Knowles and E. T. Bellhouse—Manufacture of articles in marble.

Dated 18th May.

1221. C. R. N. Palmer—Improved mode for working machinery in factories and ships.

1223. B. P. Walker and J. Warren—Manufacture of iron.

1225. C. Clarkson—Dusting, painting, and other brushes.

1227. J. Ryan—Purifying liquids.

1229. J. Barsham—Charring peat and burning lime.

1231. G. Sant—Clocks.

1233. J. Oakley—Reducing emery, &c.

1235. J. Allen—Communicating intelligence.

Dated 19th May.

1237. S. Wright—Safety-tap.

1238. T. Grahame—Covering materials for houses, &c.

1239. W. E. Newton—Machinery for pumping and supplying steam-boilers. (A communication.)

1240. J. Kippesley—Steam-engines for agricultural purposes, and for locomotion on common roads.

1241. J. A. Gilbert—Canisters.

1242. J. Wainwright—Steam-engine governor.

1243. J. T. Manifold, C. Lowndes, and J. Jordan—Extracting juice from sugar-cane.

1244. W. Fulton—Treatment and scouring textile fabrics.

1245. C. de Bergne—Permanent way, chairs, and sleepers.

Dated 20th May.

1246. S. T. Baker—Revolving shutters.

1247. C. Cowper—Steam-boilers.

1248. E. J. Schollick—Motive-power.

1249. S. Schollick—Ship-building.

1250. H. Gilbert—Apparatus for cleaning boots and shoes.

1251. A. E. L. Bellford—Rotatory engines and steam-boilers. (A communication.)

1252. T. J. Dimsdale—Purifying coal-gas, and disinfecting sewage matters.

1253. E. H. Bentall—Measuring power of engines, &c.

1254. W. C. Thornton—Machinery for wire-cards.

Dated 21st May.

1255. G. Carter—Fire-lighters, and machinery for same.

1256. J. Blair—Steam-power for railway breaks.

1257. J. Betteley—Anchors.

1259. L. G. D. B. D. Ducayla—Artificial fuel. (A communication.)

1261. G. Marriott—Fire-lighters.

1262. A. E. L. Bellford—Navigable vessels. (A communication.)

Dated 23rd May.

1263. S. A. Carpenter—Elastic webbing.

1264. E. Evans—Castors for furniture.

1265. A. A. Girouard—Paving with asphalt, &c.

1266. W. Simson—Locks.

1267. A. E. L. Bellford—Treatment of flax and hemp, so as to be spun by cotton and wool-machinery. (A communication.)

1268. A. Devy—Storing and preserving grain. (A communication.)

1269. J. H. Browne—Apparatus for bottling.

1270. P. Hannuic and G. Collasson—Treatment of oil.

1271. H. Turner—Hydraulic power to windlasses.

1272. J. H. Johnson—Forge-hammers. (A communication.)
 1273. J. H. Johnson—Pipe and other junctions. (A communication.)
 1274. W. J. Sluce, G. B. Mather, and P. Wood—Raising and forcing water, &c.

Dated 25th May.

1276. W. Babb—Hats, caps, and bonnets.
1278. G. I. Higginson—Evaporating.
1280. J. Lovell—Heating and ventilating.
1282. P. A. Deveret and C. Eck—Combing wool.
1284. P. T. Bunderovet—Shutters.
1286. J. D. and J. Carr—Oven.

APPLICATION WITH COMPLETE SPECIFICATION FILED.

1287. W. H. Mitchell—Distributing and composing types.
25th May, 1853.

WEEKLY LIST OF PATENTS SEALED.

Sealed 2nd June, 1853.

Year, 1852:

945. Cornelius De Bergne, of Manchester—Improvements in and applicable to looms for weaving. (A communication.)

Sealed 3rd June, 1853.

Year, 1852:

940. Noble Seward, of Cahercoulish, Limerick—Improvements in applying hydro-pneumatic agency for obtaining motive power.

900. Joseph Bentley, of Liverpool—Improvements applicable to fire-arms.

1008. William Baddeley, of 13, Angel-terrace, St. Peter's, Islington—Improvements in the manufacture of metal pipes. (A communication.)

1052. William Irlam, of Manchester—Improvements in railways.

1065. John Mason, of Rochdale—Improvements in the processes of bleaching and dyeing textile materials and fabrics.

1145. William Westley and Richard Bayliss, of Derby—Invention of an improved fastener, applicable to the fastening of window-sashes, tables, and other similar purposes.

1154. John Lowther Murphy, of Birmingham—Improvements in drawing off liquids from barrels and other vessels.

Year, 1853:

612. Hon. W. E. Cochrane, of Albany-street, Regent's-park—Improvements in girths or pads for retaining saddles in their places.

689. Thomas Sykes, of Castleford, Yorkshire—Improvements in the treating of soapy and greasy water. (A communication.)

886. Nathaniel Clayton and Joseph Shuttleworth, of Stamp End Iron-works, Lincoln—Improvements in portable and locomotive-steam engines.

Sealed 4th June, 1853.

Year, 1852:

964. Isaac Lewis Pulvermacher, of Paris—Improvements in pipes and cigar-holders.

Year, 1853:

610. Thomas Butler Johnson, of Upper Clapton—Improvements in roads or ways, pavements, and footpaths generally.

850. William Penn Cresson, of George-street, Portman-square—Improvements in lathes and parts connected therewith, for the purpose of reducing and smoothing the surfaces of certain metal wares. (A communication.)

Sealed 6th June, 1853.

Year, 1852:

969. Andre Jacques Amand Gautier, of Paris—Invention of an improved treatment of peat.

972. Charles Alfred Jordery, of 12, Rue Thèvenot, Paris—Improvements in the construction of the bodies of cravat collars, stocks, and stiffeners, and in the ornamenting of cravat collars and stocks in general.

976. John Norman, of Liverpool—Improvements in the mode of making and setting the square-sails of ships or vessels of any size or description.

980. Thomas Conolly, M.P., of Hanover-square, and William Cotter, of Beeston, Nottingham—Improvements in propelling vessels.

Sealed 7th June, 1853.

Year, 1852:

990. Richard Archibald Brooman, of 166, Fleet-street—Improvements in machinery or apparatus for heating or evaporating, torrefying, distilling, and refrigerating. (A communication.)

1004. Joseph Hopkins, of Worcester—Improvements in obtaining a straight line parallel to the axis of the earth, or in rendering the axis of a tube or of a telescope parallel thereto.

1060. William Edward Middleton, of Birmingham—Invention of a new or improved lubricator. (A communication.)

1062. Susan Walker, of Horsham—Improvements in clogs or pattens.

1078. James Stevens, of Birmingham—Improvements in grinding and polishing lenses.

1118. Ferdinand D'Albert, of 4, South-street, Finsbury—Invention of a certain chemical combination for replacing indigo, which I call "D'Albert Blue."

1127. John Roydes, of Greengate, near Rochdale—Improvements in machinery or apparatus for drawing cotton and other fibrous substances.

1031. John Roberts, of Upnor, Frindsbury, Kent—Improvements in apparatus for preserving animal and vegetable matters, and for cooling wines and other liquids.

1159. Robert Griffiths, of 25, Great Ormond-street—Improvements in giving motion to drills.

1172. John Mason, of Rochdale—Improvements in machinery or apparatus for preparing cotton and other fibrous substances for spinning.

Year, 1853.

57. William Henderson, of Bow-common—Improvements in manufacturing sulphuric acid and copper from copper ores, reguluses, and matts.

71. Henry Constantine Jennings, of Great Tower-street—Improvements in separating the more fluid parts of fatty and oily matters.

352. Charles Cuyllits, of Antwerp—Improvements in apparatus for regulating or governing the speed of steam or other engines. (A communication.)

381. Peter Armand Le Comte de Fontaine Moreau, of 4, South-street, Finsbury—Improvements in treating fibrous substances. (A communication.)

540. William Edward Newton, of 66, Chancery-lane—Improvements in primers for fire-arms. (A communication.)

629. Thomas Rhodes, of Regent Works, Leeds—Improvements in the manufacture of manure.

629. James Murdoch, of 7, Staple's-inn—Invention of an improved construction of portable voltaic batteries. (A communication.)

718. William Keates, of the firm of Messrs. Newton, Keates, and Co., Liverpool—Improvements in the manufacture of tubes and mandrils. (Partly a communication.)

747. Henry Lee Corlett, of 106, Summer Hill, Dublin—Improvements in railway wagons.

793. William Edward Newton, of 66, Chancery-lane—Improvements in engines to be worked by air or gases. (A communication.)

838. Colin Mather—Improvements in power-loom.

887. George Elliott and William Russell, of St. Helen's, Lancashire—Improvements in the manufacture of alkali.

891. Douglas Hebson, of 1, Dale-street, Liverpool—Improvements in working the air-pumps of steam-engines.

896. John Hinks and George Wells, of Birmingham—Improvements in certain kinds of boxes.

897. Thomas Lovell Preston, of Birmingham—Improvements in cutting out and piercing metals.

900. Charles Lowe, of Sheepy Hall, in Sheepy Magna, Leicester—Improvements in mills for grinding wheat and other grain.

908. Charles Green and James Newman, of Birmingham—Improvements in the manufacture of wheels.

909. Robert Wyburn, of East-street, Taunton—Improvements in the construction of easy chairs.

911. William John Thomas Jones, of 10, Palace-street, Pimlico—Improvements in steam-engine governors.

912. David Zenner, of Newcastle-upon-Tyne—Improvements in the treatment of ores and other substances containing metals, to obtain products therefrom, and the apparatus used therein.

913. Alexander Crighton, of 4, St. George's-terrace, Park-road, Liverpool—Improvements in the fitting of bilge-pumps, and injection-cocks of iron steamers and sailing vessels.

917. William Wilkinson, of Nottingham—Improvements in ropes, cords, lines, twines, and small handings.

942. John Chatterton, of Birmingham—Improvements in coating tubes.

944. John Fuller, of Thomas-place, Thomas-street, Kennington—Improvements in galvanic batteries.

WEEKLY LIST OF DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

Date of Registration.	No. in the Register.	Title.	Proprietor's Name.	Address.
June 3	3471	Improved Pen-holder.	Joseph Gillott	Victoria Works, Birmingham.
„ 4	3472	Improved Hawse-plug.	C. A. and T. Ferguson	Mast-House, Millwall, Poplar.